

JPRS 75755

22 May 1980

USSR Report

ECONOMIC AFFAIRS

No. 926

FBIS

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CONTENTS

ECONOMIC POLICY, ORGANIZATION, AND MANAGEMENT

Discussions on Improving Economic Management Continue (IZVESTIYA AKADEMII NAUK SSSR--SERIYA EKONOMICHESKAYA, Jan-Feb 80)	1
Organizational Structure of Management, by N. Ya. Petrakov Future Improvement of Planned Management, by N. S. Lagutin, N. I. Khomyachenko	
Guidelines for Location of Production Centers Analyzed (V. V. Kotov; IZVESTIYA AKADEMII NAUK SSSR--SERIYA EKONOMICHESKAYA, Mar-Apr 80)	29

PLANNING AND PLAN IMPLEMENTATION

New Planning Instructions Detailed (PLANOVOYE KHOZYAYSTVO, Mar 80)	42
---	----

INDUSTRIAL DEVELOPMENT AND PERFORMANCE

Improved Financing of Renovation, Retooling Urged (V. A. Gnatov, S. D. Yurchenko; DEN'GI I KREDIT, Mar 80)	48
--	----

UTILIZATION OF RESOURCES AND SUPPLY

New Developments in Supply Organization Highlighted (Various sources, Feb, Mar 80)	56
Material, Technical Base, by B. Mukhin, Yu. Gusev Planning, Organization of Supply, by V. Yefimov	

CONTENTS (Continued)

REGIONAL DEVELOPMENT

- Article on Territorial-Production Complexes Reviewed
(N. Raman; PLANOVOYE KHOZYAYSTVO, Mar 80) 74

INTRODUCTION OF NEW TECHNOLOGY

- Financing of Scientific-Technical Research,
Development Scrutinized
(V. Ye. Shalimov; VESTNIK MOSKOVSKOGO UNIVERSITETA,
Jan-Feb 80) 77

ECONOMIC POLICY, ORGANIZATION, AND MANAGEMENT

DISCUSSIONS ON IMPROVING ECONOMIC MANAGEMENT CONTINUE

Organizational Structure of Management

Moscow IZVESTIYA AKADEMII NAUK SSSR--SERIYA EKONOMICHESKAYA in Russian
No 1, Jan-Feb 80 pp 5-17

[Article by N. Ya. Petrakov: "Problems in Developing and Perfecting the System for Managing the Socialist Economy"]

[Text] The decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Improving Planning and Increasing the Impact of Economic Instruments on Production Efficiency and the Quality of Performance," dated 12 July 1979, has once again demonstrated quite obviously that the orientation toward development and widespread adoption of effective methods of managing the economy is the party's long-range line of strategy in the domain of economic policy.

The preparation of that document was envisaged by the decisions of the 25th CPSU Congress and was the result of lengthy joint work by officials from the party and the economy, specialized practitioners and scholars to summarize the experience accumulated in recent years and to analyze those urgent problems which have arisen in the current stage of our economic development. Probably the most essential characteristic of that decree is its organic combination of continuity and innovation in its approach to solving the key problems of economic life. The main orientation of the system of measures outlined to raise the level of planning and economic performance is toward raising the efficiency of social production, toward speeding up scientific-technical progress and the rise of labor productivity, toward improvement of product quality, ensuring thereby a steady rise in the prosperity of the Soviet people.

The main road to accomplishing these tasks, as set forth in the decree, lies in further improvement of guidance of the economy through plans, development of democratic principles in the management of production and enhancement of the creative initiative of working collectives. As we see, both the goals and the means of attaining them outlined in that document are in full accord with the line of the party, which has been unswervingly

implemented for more than one decade now and has been manifested with particular distinctness since the March and September (1965) plenums of the CPSU Central Committee. It was at those historical plenums that our party worked out the fundamental lines of the course of economic policy which under present conditions is ensuring an optimum combination of planned centralized management with the economic initiative of enterprises and associations, with the creative activity of the Soviet workers. That was when the system of petty meddling with enterprises was abolished; it was manifested in the multiplicity of targets planned for them, indicators which were frequently intermediate, secondary and mutually contradictory. It was then that the course was adopted toward closer linkage of the results of economic activity with the system of material incentives, that the specialized funds for production development, social welfare and cultural programs and housing construction, and material incentives, funds built up from the profit of economic organizations, were introduced at enterprises, it was then that material accountability for the use of productive capital was strengthened, and so on.

Summing up the results of the first stage of implementation of these measures, L. I. Brezhnev noted at the 24th CPSU Congress in March 1971: "Experience in these last years allows us to say that once it had begun to carry out the economic reform the party correctly evaluated the situation, adopted the correct course as to improving management of the economy."*

The need for a consistent advance along the road toward improvement of the economic mechanism was emphasized with particular force at the 25th CPSU Congress. "The Central Committee," L. I. Brezhnev said, "is opposed to hasty and superficial reorganizations of the management structure and the methods of economic activity in place. This is a case where the measurements need to be made not 7 times, as the phrase goes, but 8 or even 10 times before the cut is made. But once we have made the measurement, if we have understood that a continuously developing economy has become cramped in the framework of the existing economic mechanism, then we should be resolute in improving it."**

The appearance of this decree represents a stage that develops the strategic line of the CPSU in the domain of improving the system of management of the economy. There is no question that this line also has deeper roots that lie in the domain of the fundamental patterns of development of socialist society. We have characterized the situation only over the last 15 years. But it is quite well known that the red banners of the revolution had hardly replaced the tricolor and two-headed eagle of the Russian Empire when the appeal of Vladimir Il'ich Lenin rang out: Learn how to manage and to master the art of organizing production "on the scale of a million."

* "Materialy XXIV s"yezda KPSS" [Materials of the 24th CPSU Congress], Moscow, Politizdat, 1971, p 69.

** "Materialy XXV s"yezda KPSS," Moscow, Politizdat, 1976, p 61.

February 1918: "Upcoming Tasks of the Soviet Government." It is enough to cast a glance at the table of contents of this historically important document to understand the kind of attention which V. I. Lenin paid to the problem of management in all its aspects.

It is interesting to note that 3 years later--the Civil War, which had doomed plans for peaceful construction of the new society, was not yet over--V. I. Lenin again returned to this document. V. I. Lenin began the justification of the broad program for restructuring of methods of management dictated by wartime with extensive passages from "Upcoming Tasks of the Soviet Government," leaving no room for doubt that the new economic policy of the young Soviet state was by no means an opportunistic maneuver. "... Lenin was looking far ahead," L. I. Brezhnev said in his address devoted to the 50th anniversary of the Great October Socialist Revolution. "Even then he was working out those principles of socialist economic activity which have retained all their importance even in our own time. Lenin's principles of combining centralized management with development of worker initiative, of using commodity-money relations, cost accounting, and material work incentives, of unifying the interests of society as a whole with the interests of each individual worker are even today exceedingly important guideposts in the party's economic policy."

The decree we have mentioned of the CPSU Central Committee and USSR Council of Ministers is aimed at implementing those Leninist principles in the context of today's economic conditions and tasks. An analysis of the actual pathways and factors of the USSR's economic development over the next 10 or 15 years shows that the opportunities for achieving economic growth by enlisting additional amounts of physical and labor resources are becoming considerably more restricted. The gradual exhaustion of extensive factors for the development of social production is an objective and normal process which the CPSU Central Committee has repeatedly called to the attention of planning and economic agencies. It is an exceedingly important task to draft a set of measures whose performance will make it possible to gradually offset the possible adverse consequences of this process and to ensure maintenance of high rates of socioeconomic development and higher prosperity for the workers. This task can be performed only if a determined change of direction is accomplished toward activation of intensive factors of economic growth by speeding up scientific-technical progress and by utilizing to the fullest the available production resources and creative potential of the Soviet people. It is above all for this particular reason that the problems of further improvement of the system of planning and managing the economy are becoming particularly urgent in the foreseeable future.

At the same time, it is equally important that the system of planning and management is organically dependent upon the character and level of development of the sum total of socialist production relations. For that reason the gradual development of socialist society objectively necessitates that the system for management of the economy be constantly adjusted to the

level of development of the productive forces and to production relations, that new tendencies in the social structure of advanced socialist society be taken into account, and that there be a change of emphasis in attitudes toward work and toward the forms and level of the satisfaction of needs.

The decisions of the 23d, 24th and 25th CPSU congresses and of plenums of the CPSU Central Committee and the new Soviet Constitution have stated in clear-cut terms the basic principles of economic management and the strategic directions in which they shall be applied in practice. It is obvious that the improvement of planning, of the organizational structure and of the economic mechanism must still be based on those principles in the future and must consist of their development and concretization in accordance with the actual socioeconomic conditions for the growth of the socialist social system.

The purpose and content of the process of improving the system for management of the economy arise out of the demands of the basic economic law of socialism and are subject to that law. Overall improvement of the mechanism for management of the socialist economy is one of the most important conditions for accomplishing a major economic maneuver in order to put the entire economy on the road of intensive development and to mobilize internal potential.

The principal problem areas requiring constant attention and determining the quality, effectiveness and efficiency of the management system as a whole are the following:

- i. assuring a larger role of the party in managing the economy in all the stages and at all levels of management from formulation of the goals of Soviet society's socioeconomic development to invigoration of the participation of primary party organizations of enterprises, shops, sections and work teams in identifying unused potential, in adopting strenuous planning targets, in ensuring a uniform pace of operation, in evaluating each worker's contribution to fulfillment of production targets, in monitoring the activity of the management, and so on. Moreover, party organizations must not take the place of the professional management staff in their efforts nor assume their functions, but on the contrary, they should promote in every way a greater sense of responsibility on the part of planning and economic officials for the efficiency and soundness of decisions taken and with respect to ideology should penetrate the entire performance of government authorities;

- ii. strengthening centralized planning while at the same time ensuring the necessary flexibility, responsiveness and compatibility of actions of planning agencies in the process of current management of the economy and in expanding the planning horizon in the field of the drafting of multiannual plans. Guaranteeing the most efficient utilization of the advantages of conducting a unified multinational centralized economic and scientific-technical policy in combination with deriving the greatest benefits for

society as a whole from the economic initiative of production collectives and individual workers manifested during performance of the assignments of society, exploration of ways of saving on production resources, introduction of new technology, and so on;

iii. combination of national, group and personal interests of the workers on the basis of priority for national interests, development of material and moral incentives in all domains of social production, enhancement of responsibility for economical utilization of economic resources, for satisfying the planned need of the client and the public, and for the fulfillment, drafting and current adjustment of planning targets;

iv. assuring an organic interrelationship of the sectoral and regional aspects of planning and management.

The forms and methods of solving each of these four key problems of economic management cannot be stated in advance once and for all because of the dynamism of the socialist system. They must be "linked" to each actual stage in the country's social and economic development. For that reason improvement of the system of management cannot be regarded as a one-time measure; it is a process. Management of this process presupposes organic combinations of emergency measures, whose purpose is to rapidly eliminate adverse current phenomena that arise from time to time, the drafting of a multianual program for development of the system of management of the national economy as a whole and of its individual entities, and also performance of a set of coordinated measures on behalf of step-by-step practical implementation of this program in accordance with the objective socioeconomic conditions and as they mature.

Experience shows that slowing down in solving the current problems that are part of each of the key problems signifies a certain drop in efficiency of social production. For instance, the artificial divergence of interests of the different levels of the management system has given rise to cases of concealment of potential, of refusal to adopt strenuous plans, of orders in excess of the true need, of slowness in putting new products into production, of neglect of product quality, and so on.

On the other hand it is quite obvious that rapid and responsive solution of the urgent problems of economic life can degenerate into unsystematic "patching up of rips," of bumping from one extreme to the other unless it is reinforced by a scientifically sound long-range prospective program (coordinated in its elements and stages and the conditions for its introduction) for improvement of the entire management mechanism.

The program for improvement of the economic mechanism must be comprehensive in nature and must include long-term measures along the following lines:

i. improvement of the organizational structure of management at all levels and in all entities of the economy, including development of the legal

bases for comprehensive solution of the problems of the organization of management;

- ii. improvement of the planning mechanism of the national economy;
- iii. improvement of economic levers and incentives for raising production efficiency;
- iv. development and introduction of statewide, sectorwide and industrywide, functional and program-oriented computerized management systems;
- v. improvement of the forms and methods for expanded worker participation in management.

The basic tasks of the first stage of carrying out the set of measures to improve the system of management of the national economy were defined in advance by the decree we have mentioned of the CPSU Central Committee and USSR Council of Ministers, which oriented the system of management toward the following:

- i. closer attention to multiannual planning, including the drafting of a comprehensive program of scientific-technical progress over the 20-year period (broken down by 5-year periods) and main lines of the country's economic and social development over the 10-year period (with annual breakdown of the first 5-year period);
- ii. effective transformation of the 5-year plan into the principal form for planning the country's economic and social development and the basis of organizing economic activity by putting order into the dates and procedure for compiling and approving 5-year assignments, for breaking the latter down (in an annual breakdown) to associations and enterprises and into evaluation of cumulative fulfillment of plans, thorough linkage of physical and financial balances and assurance of the necessary reserve allocations;
- iii. improvement of the management of investment activity by creating and implementing key national economic programs aimed at faster attainment of the priority goals of economic development (national economic priorities), through organization of effective cost accounting of construction organizations operating as contractors, by developing strict material accountability of designers, contractors and customers for the end results of the activity of projects put into operation;
- iv. essential invigoration of the financial and credit mechanism by including it in the unified physical and financial balance of the national economy, by expanding long-term credit financing of capital investments and a corresponding reduction of subsidy forms of financing the economy; broad application of economic standards and payments for utilization of all types of production resources prevailing throughout the national economy;

v. achievement of balance between personal money income and commodity supply by establishing a direct functional relationship between the final results of the economic activity of enterprises and associations and the levels of worker remuneration, care being taken that the social productivity of labor increase faster than money payments, and also differentiation of retail prices; assurance of accelerated development of industries producing consumer goods and rendering services and conversion of these industries to the system of full cost accounting on a priority basis;

vi. creation of a system for management of the country's agroindustrial complex as a unified national economic whole guaranteeing coordinated development of all its parts and an orientation toward deriving the maximum final results from the standpoint of the national economy;

vii. assurance of a more effective combination of the sectoral and regional aspects of management of the national economy by expansion of the economic independence of regions with respect to use of natural resources and environmental protection, development of the infrastructure, and the social conditions for expanded reproduction of manpower resources;

viii. building the foundations for setting up an integrated system for gathering and processing socioeconomic information on the scale of the entire national economy.

Performance of this set of tasks will help to spur the growth of the socialist economy by realizing the potential capabilities of the planned system of management essentially without enlisting additional physical and manpower resources. As for the more remote future of development of management methods, solving the principal key problems of organizing the mechanism by which the socialist economy functions must obviously be determined by the general pace of the objective socioeconomic processes taking place in our society.

The mechanism for management of the socialist economy at the end of the 20th century should ensure the social system's effective development in the context of a tremendous augmentation of the scale and complexity of the entities being managed and of their interrelations, of expansion of the diversity of social and personal needs, of a sharp enlargement of the share of demand for cultural goods in the composition of the total needs of the worker, of intensification of the processes of mitigating the differences that exist between city and rural areas and between mental and physical labor.

The role of the centralized plan in the system of management of the national economy must grow still more under these conditions and undergo modification to some extent.

The acceleration of scientific-technical progress as the interrelations between the entities in the system become stronger because of the processes

of industrial specialization and cooperation necessitates not only an expansion of the planning horizon, but also a strengthening of the directive nature of national economic plans. National economic plans must especially set forth the minimum permissible (and therefore strictly mandatory) volumes of output of products which ensure maximum growth of efficiency by opening up "bottlenecks," discovered in the process of analyzing prior development and in compiling the plan. Thus the list of products (and the degree of its consolidation), which is planned in physical terms, need not be set down once and for all, but is determined by the scale and direction of structural shifts and also by the existence of imbalances in production and needs.

Augmentation of the role and efficiency of centralized planning in the future is also manifested in a considerable expansion of the normative base of planning, which would include not only technical-and-economic norms, but also economic standards remaining in effect for lengthy periods (standards of the minimum permissible efficiency of expenditure of production resources, rates governing distribution of income, remuneration, and so on), as well as social standards and quotas. Development of the system of social standards and quotas characterizes a qualitatively new stage in planning, one which reflects the specific features of meeting the requirements of the basic law of socialism over the next 10-15 years. Even now we observe a process whereby the social sections of the national economic plan are becoming stronger and broader. This tendency will develop further in the future. New synthetic planning indicators reflecting the sum total of conditions characterizing the way of life and quality of life of the Soviet people must be developed. It would be wise to make a gradual transition from planning the output of specific consumer goods (whose volumes and composition of output would be stated more precisely at the lower levels of management--in the drawing up of business contracts) to stating in the national economic plan the social standards of living and the scale and time of their achievement.

For instance, planning the growth of housing construction in square meters will give way to the planning of the social standard of conditions under which people live (differentiated in accordance with the specific nature of particular regions and peculiarities of ethnic communities). The social standard of the living conditions of the population would include an entire group of economic characteristics of housing and living conditions (the number of rooms in the dwelling unit, the adequacy of basic conveniences, the amount of greenery, distance from the workplace and recreation areas, the level of air pollution, and so on). Synthetic social standards of this kind might also include achievement of safety in transportation and public safety, job satisfaction, and so on. The last of these indicators, in our view, will in time come naturally to replace the indicator of mechanization and automation of heavy manual labor in principal and auxiliary production operations, since it is more comprehensive and appropriate to the socio-economic situation over the next 10-15 years.

Achievement of the goals of advanced socialist society, which looks upon the economy and productive potential as a means of ensuring a rise in the prosperity of the workers and comprehensive development of their abilities and creative opportunities, should in future, we believe, bring about a change in the conception of economic growth as the only or decisive indicator of the dynamic behavior of the socioeconomic system.

Indicators of the growth of the gross social product and the national income, for all their importance, cannot be used as criteria in evaluating the rise in the prosperity of the population and social progress, since by their nature they characterize the level of expansion of material capabilities for satisfying the needs of society, but not the level of actual attainment of goals in the field of social welfare.

Strengthening the orientation toward final results at the macroeconomic level of the system of management of socialist society gives rise to the need to fashion planning indicators that take into account the entire set of factors determining social progress.

It is quite obvious that the entire series of measures characterizing the level of socioeconomic development of contemporary society cannot be reflected in the indicator of the dynamics of the national income; what is more, their achievement often tends to detract from that indicator when computations are confined to the methodology which is now accepted. This applies to expenditures for environmental protection, to improve pension coverage, to build and develop the social infrastructure, to equalize the income and living conditions of various social groups, to develop a whole series of fields of knowledge which are not directly related to the tasks of speeding up economic growth and technical progress, and so on.

The organizational structure of management of the economy will undergo continuing development in the future. An analysis of past experience has shown that hypertrophy of the regional principle in management of the national economy will result in a number of serious adverse consequences. At the present time the sectoral system of management is dominant. But in recent years even it has undergone a number of modifications resulting from the objective needs of economic development. At present not a single scientific-technical idea of any magnitude can be developed and applied strictly within an industry. The problems of accelerated scientific-technical development are by definition intersector (and frequently even inter-regional) problems. That is why the way to improve the system of management is to synthesize the sectoral and regional principles of management, to create intersector national economic and regional-industrial complexes and to achieve organic functional linkage between the sectoral and regional management organs.

Fulfillment of this requirement is served to some extent by the creation of comprehensive national economic programs embracing the principal aspects of socioeconomic development, whose performance entails sizable structural

shift in the national economy and necessitates a drastic redistribution and concentration of resources on the priority lines of development.

The program should become an important component of the long-range plan and should set the pace for development of the socioeconomic system. When the long-range intersector programs are drafted, evaluated and selected, the main lines along which scientific-technical progress is to be included in the national economic plan are determined, and the basic lines of investment policy and structural shift in the economy are revealed. The main thing in compiling and interlinking the different programs in the process of national economic planning is to determine the system of special-purpose indicators which will reflect in synthetic form the national economic orientation of programs and will make it possible to evaluate their effectiveness.

The transition to planning with special-purpose programs requires efficient organization of the procedure of compiling the unified national economic plan, which remains the decisive link in the entire functional process, and more consistent regulation of the rights and responsibilities of the various management components.

Planning agencies at the upper levels, L. I. Brezhnev has noted, should be freed "of a sizable portion of current affairs so that they can concentrate their attention on the main problems in development of the national economy."* The principal task of top-level planning agencies should then be to draft alternatives for realizing the long-range conception of the social and economic development of socialist society, to compile long-range and 5-year plans, and also to prepare drafts of long-range programs in consolidated form and to correlate them as a body with all the sections of the national economic plan. Performance of these tasks necessitates a revamping of the structure of central planning agencies along functional rather than sectional lines and also more straightforward coordination of Gosplan's work with such statewide departments as the Ministry of Finance, the Committee for Labor, the Price Committee, Gosbank, etc.

It is very important to upgrade the role of the banking system in the medium-term and current planned regulation and distribution of capital investments. The bank, which by its nature is a cost-accounting entity, is capable of ensuring effective distribution of resources for capital investments as the volume of budget financing of construction is gradually reduced and the transition made to credit financing and as bank interest becomes an economic instrument for effective distribution of resources for capital investments.

Under those conditions ministries covering sectors and industries should be responsible for effective use of the resources allocated them to carry out the respective elements of programs, as well as for overall technical policy

* "Materialy XXIV s"yezda KPSS," p 68.

in the sectors of the economy and for satisfying industrial and personal needs not covered by any of the comprehensive programs. In future the ministries should either take over the functions of the associations (like the Ministry of Instrumentmaking, Automation Equipment and Control Systems, for example) or become agencies that act as coordinators of the efforts of a number of associations and define technical policy (for example, in light industry and the food industry).

In future there will be a stronger trend toward development and reinforcement of associations as the principal production-and-economic unit in the national economy. The principal tasks which the associations are expected to perform as specific structural subdivisions in the overall system of management of the national economy are determined by the following factors.

1. The need for effective organization of the distribution of functions, rights and responsibilities among the central planning and management agencies and the entity which actually organizes the production process.

Management of sufficiently large economic complexes like the associations is obviously more effective than the squandering of the efforts of state planning agencies over an enormous number of medium-sized and small enterprises. The operation of the large associations is easier to subject to economic analysis, there is no need for petty interference, and it is therefore possible to raise the level of scientific soundness of planning targets while at the same time the number of mandatory indicators assigned is reduced. On the other hand the size of the association makes it possible not only to expand the rights of their managers, but, and this is especially important, to increase their responsibility for fulfillment of the plan and for satisfying the requirements of customers.

2. The need to ensure that there is always rapid communication along the line from scientific research to industrial application. The resources of the individual enterprise are not capable of building up an adequate backlog of scientific and mechanical ideas, nor of maintaining staff services to follow general trends in technical development within the industry and in related industries. That is why scientific-production associations and also the practice of making research, design and training centers components of associations should experience very widespread development in the future.

3. The need to ensure an effective combination of the sectoral and regional aspects of management at the level of cost-accounting entities. This is dependent upon further development of regional production associations in the future, especially in the nonindustrial sectors of the economy.

4. The need for further development and more orderly "horizontal" relations among cost-accounting entities.

The transformation of the business contract so that it actually becomes a planning document which states in specific terms the needs of society and which realistically regulates production-and-economic relations between producer and consumer is possible only if parties to the contract bear financial liability to the full extent for meeting their mutual obligations. Fulfillment of this condition is considerably easier thanks to the existence of large associations. In future, of course, the extensive development of direct relations between associations based on business contracts will not signify a withering away of the functions of material and technical supply agencies. On the contrary, the role of these agencies in the system of managing the distribution of resources should in our view increase. Whereas the business contract is based on a current need already financed for a product that has already been put into production and is being manufactured, the system of material and technical supply agencies should compile a "portfolio of orders" aimed at a point in time some 2 or 3 years in the future, a portfolio that would pool and process information on the possibilities of organizing the manufacture and large-scale production of new products, potential consumers of such products, possibilities in terms of resources of achieving painless transition to the production and consumption of a new product. By performing this activity material and technical supply agencies will actually ensure that at the lower levels of management structures a constant balance of economic relations is maintained in the context of microstructural shifts resulting from development and application of specific models and prototypes of new equipment and technology.

The future development of economic practice will obviously yield a sizable variety of specific forms of internal organization of associations resulting from the specific nature of the production-and-economic tasks performed within the limits of each economic complex. Here we can identify two basic types of associations: the vertical (technological) and the horizontal (business-and-economic).

The existence of the former type results above all from the organizational and economic feasibility of bringing together in a unified complex enterprises which one after the other process one and the same initial raw material or which are manufacturing parts and assemblies that are components of a single end product. Enterprises within associations of this kind are connected to one another either by the technological chain of conversions or by a single center where the end product is assembled, in which case it dictates the list, quantities and rate of production of products for each enterprise that is part of the association. That is why the criteria for judging the operating efficiency of these enterprises might be reduction of expenditures of labor and other production resources per unit output assuming unconditional adherence to quality standards, delivery dates and quantities delivered.

Associations of the second type usually consist of enterprises at one level which are brought together organizationally mainly in order to conduct a

single technical policy, to raise the operating efficiency of staff services for supply and sales, to pool funds intended for reconstruction and modernization of production, to improve worker welfare, to build up reserve funds so as to afford more flexible maneuvering of resources, and so on. In associations of this type the enterprises should have a great deal of independence in selecting suppliers and consumers, in concluding business contracts, in exploring ways of maximizing the difference between the results and the costs, including not only measures to reduce production cost, but also exploration of ways of expanding the assortment and improving the quality of finished products and of increasing the production of products for which there is higher demand.

In future both these types of associations should become widespread. Moreover, whereas the former type will be predominant in the branches of heavy industry, since it appropriately reflects the objective conditions of that sphere of social production, the latter is mainly applicable in the branches of light industry and the food industry and the service sector.

It follows from what we have said that realization of the extradepartmental principle in the creation of associations will be an important tendency in their future creation (one which has not developed sufficiently in the present stage). Consistent implementation of this principle is one of the important instruments for overcoming the well-known limitation of sectoral management and of assuring the indispensable synthesis of centralized management with economic independence, of the regional and sectoral aspects of management, and of science and production at the level of the production-and-economic unit in the system of management of the national economy.

The problems of improving the organizational structure of management of the national economy stand in organic unity with the problems of developing and strengthening the mechanism by which the economy functions. The organizational structure of management, conceived not merely as a list of management organs, but as a system for optimum distribution of functions, rights and responsibilities, of a procedure and form for interaction among these organs, is only the other side of a description of the functional mechanism.

The latter is like the process whereby structural relations in the management system are accomplished.

Development of the functional mechanism of production and social units over the foreseeable future will take place along the following lines:

1. Enhancement of the role of public organizations in managing socio-economic development.

One of the manifestations of the growing role of public organizations will be expansion of the economic independence of production units along with a simultaneous strengthening of the role of the public organizations of those

units in the management of production. Sectoral and regional public organizations will have a greater role in detailing the assignments of the state plan and they will participate more fully in the entire system of management of social production.

2. Growth of the importance of socialist competition as a factor tending to heighten the creative activity of the masses and their impact on concrete economic processes. The figures achieved by production collectives and individual workers in the results of a socialist competition must to an ever greater degree characterize their contribution to the final results of social production and at the same time determine the level of their material and moral incentives. The conditions for organizing competition for individual production collectives and workers should presuppose that the progress and results of the competition will be widely published and, which is the main thing, that the opinion of the consumer (customer or the public) will be decisive in evaluating the results of the competition.

3. Strengthening the role of money units for measuring the costs and results of social production along with a simultaneous expansion of the sphere of gratis consumption and reduction of the role of cash circulation in the sphere of paid consumption of commodities and services.

Economic (money) assessment will also be made of information resources, natural resources from space (solar radiation and the like), and also such results of social production as greater abundance of free time and improved opportunities for putting it to effective use. Along with the greater role of money as a synthetic yardstick for measuring the efficiency of social production, it will become less important as a means of cash payment because of expansion of the sphere of gratis consumption and development of various forms of settlement for goods and services in the sphere of paid consumption that do not involve the use of cash.

Improvement of the planning of the circulation of money in its cash and noncash form will first ensure the stability of the ruble in the country's domestic circulation by attainment of structural balance between the income of enterprises and individuals and the resources to cover them, and in the future it will result in external economic convertibility of the Soviet ruble.

4. Development of social work incentives as the needs of the workers for material goods become saturated. They include above all the feeling of being involved in the management of production and the country's socio-economic life, enhanced prestige within the collective, the preferability of work which has creative content, and so on. This tendency in their development should result in a gradual reduction of the role of present economic incentive funds (especially those which are personal in nature--bonuses, reduced-rate travel passes, valuable gifts, the offering of better housing conditions, and so on) and the gradual emergence of new forms of joint worker participation in management of production and social collectives, a

competitive system for filling vacancies, strict accountability of managers of enterprises, shops, and work teams to their work collectives, of group decisionmaking on the economic and social development of production-and-economic units, and so on.

Improvement of the system of management and the methods of working out optimum decisions at various levels of the economy should be ensured in the future in the following ways:

i. by creation of an interdepartmental information-and-equipment facility [informatsionno-tekhnicheskaya baza] (OGAS [Statewide Automated Management System], GSVTs [State Network of Computer Centers], an automatic data bank at the national level), which would be invariant regardless of changing conditions for decisionmaking at all levels of the economy. There is a particular need to turn attention to the fact that creation of the OGAS is an indispensable condition for realizing the strategic possibilities for improvement of the system of management of the national economy;

ii. economic and moral responsibility of all units of management for the effectiveness of the decisions taken;

iii. creation of specialized subdivisions and drafting of procedures for collective decisionmaking in organizational structures of management.

In future there should be an improvement in the very methodology of designing management systems and of making them more efficient. An analysis of lines of scientific research in this field furnishes grounds for supposing that in the near future there will be extensive development of computerized methods of analyzing and synthesizing management systems with respect to creation of their information-equipment capability. Simulation and business games will become a powerful means of working out group decisions and drafting measures to adapt management systems to changing conditions in production-and-economic activity. Effective procedures will be developed for contact between the management staff and formal methods of decisionmaking; these procedures would be based on realization of the ideas of learning and self-perfecting decisionmaking systems.

The decree of the CPSU Central Committee and USSR Council of Ministers we have indicated also has particular importance to development of Soviet economic science. It not only outlines the ways and methods of solving the urgent problems of our economic development, but it also contains a thoroughly substantiated "social order" presented to specialists in the science of economics for further work on the theoretical and methodological problems of developing the system for management of socialist society.

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Future Improvement of Planned Management

Moscow IZVESTIYA AKADEMII NAUK SSSR--SERIYA EKONOMICHESKAYA in Russian
No 1, Jan-Feb 80 pp 145-153

[Article by N. S. Lagutin and N. I. Khomyachenko]

[Text] In accordance with the decree of the CPSU Central Committee entitled "On the 50th Anniversary of the First Five-Year Plan for Development of the USSR National Economy," a scientific-practical conference dedicated to the 50th anniversary of adoption of the First Five-Year Plan for Development of the USSR National Economy and to the problems of further improvement of planned management of the economy was held in May 1979 in Moscow. It was organized by USSR Gosplan, the USSR Academy of Sciences, the Academy of Social Sciences of the CPSU Central Committee and the Academy of the USSR National Economy.

The scientific-technical conference was scheduled to coincide with the 50th anniversary of adoption of the First Soviet Five-Year Plan by the Fifth All-Union Congress of Soviets, which was the ancestor of all the subsequent 5-year plans, whose implementation has raised our country to the heights of economic, scientific-technical and social progress. The historical significance of the First Five-Year Plan, as stated in the decree of the CPSU Central Committee, lies in the fact that it marked the beginning of using 5-year assignments as the principal form of economic planning, transformed them into a great mobilizing force for the construction of communism, and proved in actual deeds the superiority of socialist methods of economic management over capitalist methods.

The conference was opened by a brief introductory address by Ya. P. Ryabov, chairman of the organizing committee for conducting commemorative events in connection with the 50th anniversary of adoption of the First Five-Year Plan for Development of the USSR National Economy and first deputy chairman of USSR Gosplan. He emphasized that the purpose of the conference was above all scientific summarization and creative conceptualization of the experience gained in planned management of the economy. As noted at the November (1978) Plenum of the CPSU Central Committee, an enormous amount of experience, much of it unique, has been gained in the country over the past 50 years in the planned management of economic development with the comprehensive approach to solving economic, scientific-technical and social problems. The 5-year plans, beginning with the first one, have become the principal instrument in carrying out the economic policy of the Communist Party, which is aimed at strengthening and developing the socialist system, at step-by-step augmentation of the country's productive forces, at a steady rise in the prosperity of the people, at improvement of social relations, at development of the socialist way of life, and at the character-building of man as an individual with a varied and harmoniously developed personality. The 5-year plans, as is indeed the case with socialist planning, have rightly become the most important form for managing the economic and social

development of our society. "Planning the development of the national economy is one of the most important scientific and social achievements of the 20th century and of the revolutionary practice of transforming social life," stressed the decree of the CPSU Central Committee entitled "On the 50th Anniversary of the First Five-Year Plan for Development of the USSR National Economy."

Experience in carrying out state plans for economic and social development of the USSR, the very nature of advanced socialism, the extremely rapid development of science and technology, the growth in the scale of social production, the increasingly complicated intersector and intrasector relations, and also the USSR's expanding relations with the socialist and other states make it truly imperative that planning undergo further improvement in order to follow the party's consistent course toward a substantial rise in the standard of living of the people and toward creation of ever more favorable conditions for the character-building of the new man on the basis of higher efficiency of social production and higher quality of performance in every component. That is why the purpose of the scientific-practical conference was also to discuss the problems that are ripe for solution in the further improvement of planned management of the economy.

In the first plenary session papers were presented by N. K. Baybakov, deputy chairman of the USSR Council of Ministers and chairman of USSR Gosplan ("The 50th Anniversary of the First Five-Year Plan and Development of Socialist Planning"), by V. A. Kotel'nikov, vice president of the USSR Academy of Sciences ("Problems of Multiannual Planning of Scientific-Technical Progress"), V. A. Medvedev, rector of the Academy of Social Sciences of the CPSU Central Committee ("Marxist-Leninist Doctrine--The Scientific Foundation for Planning Economic and Social Development"), and N. V. Mel'nikov, rector of the Academy of the USSR National Economy ("Planned Management and Improvement of the Training of Supervisory Personnel for the Economy").

Participants in the proceedings of the conference included responsible officials of the CPSU Central Committee, USSR Gosplan and the gosplans of the union republics and of ministries and departments, distinguished scientists and staff members of scientific-research organizations, VUZ lecturers, heroes of the first 5-year plans, representatives of plants built during the years of the First Five-Year Plan and representatives of all the union republics and many of the country's oblasts. More than 1,200 persons took part in the proceedings of the plenary session. More than 2,000 persons participated in the five sections in which the conference did its work.

The conference adopted elaborate recommendations on the directions and the improvement of planning the economic and social development of the country, of the union republics and of economic regions, as well as of scientific-technical progress, on strengthening scientific research in the planning field, and also on improving the training of supervisory personnel for the economy and planning officials.

N. K. Baybakov summed up the results of the work that was done.

The participants in the scientific-practical conference enthusiastically adopted the letter of greetings to the CPSU Central Committee and to Comrade L. I. Brezhnev, general secretary of the CPSU Central Committee and chairman of the Presidium of the USSR Supreme Soviet.

We present below material on the sessions of the conference's five sections.

Section Entitled "Problems of Improving Multiannual Planning of the USSR's Economic and Social Development"

One of the most important tasks of USSR Gosplan and the planning agencies of the union republics, ministries and departments, as defined in the main lines for improvement of national economic planning adopted by the 25th party congress, is to enhance the role of multiannual plans and above all 5-year plans in ensuring the economy's proportional and balanced growth.

Ways of performing this task were revealed above all in the papers of G. M. Sorokin (Economics Institute of the USSR Academy of Sciences) "The First Five-Year Plan and Development of Planning Theory"; V. N. Kirichenko (Scientific Research Economics Institute of USSR Gosplan) "Improvement of the Methodology of Multiannual Planning"; N. P. Lebedinskiy (USSR Gosplan) "The Computerized System of Planning Computations (ASPR) and Improvement of Planning"; and Ye. A. Ivanov (USSR Gosplan) "The Present Stage in Drafting 5-Year Plans."

The speakers unanimously stressed the outstanding historical importance of the First Five-Year Plan, which is an important stage in shaping the methodology and methods of socialist planning, which received, as we know, international recognition not only in the socialist and developing countries, but even in the capitalist countries. At the same time the speakers paid much attention to discussion of current problems in further improvement of multiannual planning in the light of the historical decisions of the 25th CPSU Congress, subsequent plenums of the CPSU Central Committee, and other party documents and materials on aspects of economic policy.

The speakers pointed to the need for further improvement of an interconnected system of long-range, 5-year and annual plans. Attention was paid to further enhancement of the role of the 5-year plan as the principal form for planning a large contemporary socialist economy. In particular, note was taken of the decisive importance of the 5-year plan in proportional and balanced economic development, in more resolute conversion of the economy toward intensive development and higher efficiency of social production, and in the comprehensive solution of major scientific-technical, economic and social problems.

The papers and statements correctly stressed the need for further work on all aspects of the urgent problems of the methodology and methods of

economic and social planning and the need to achieve their requisite unity and interlinkage. This was a particular topic of A. I. Smirnov (USSR Gosplan).

Attention was called to the need for a more correct combination of the sectoral and regional aspects of planning, for more intensive work in USSR Gosplan and the gosplans of the union republics on the comprehensive programs of scientific-technical and social development, as well as on comprehensive programs for development of regional industrial complexes, and for solving other regional problems. Even at the present time the forms and methods used in applying the approach based on the special-purpose program are improving more and more, the practice of compiling republic programs is improving, and the problems of linking the programs to the plan and of determining their effectiveness and the relevant indicators have become urgent. These were the topics of K. P. Mash'yanov (RSFSR Gosplan), M. M. Raman (Latvian Gosplan) and V. Yu. Budavey (Scientific Research Economics Institute of USSR Gosplan).

It is also important to note that there was reference in the section to the need for further substantial improvement in the balance method of planning, specifically more consistent use of the balance of the national economy and the system of physical balances in planning practice and in the drafting of multiannual plans. I. A. Kalinin and O. M. Yun' (USSR Gosplan) touched upon speeding up development of the system of quotas and standards; improvement of the compilation of physical and value intersector balances as well as centralized computations of needs for material resources, and improvement of the entire set of norms and standards on which multiannual planning is based.

E. F. Baranov (Central Mathematical Economics Institute of the USSR Academy of Sciences) noted in his statement, as indeed N. P. Lebedinskiy (USSR Gosplan) did in his paper, the need to speed up the development of the computerized system of planning computations and its introduction into the practice of multiannual planning, along with extensive use of the methods of mathematical economics and a system of models.

The conference discussed the questions of how officials of USSR Gosplan can make the fullest use of the materials of the "Comprehensive Program of Scientific-Technical Progress and Its Socioeconomic Consequences," prepared by the USSR Academy of Sciences and the State Committee for Science and Technology, in preparing the proposed version of the plan for economic and social development of the USSR beginning with the 11th Five-Year Plan and for the period up to 1990.

There was also reference in the section to the need to develop reference figures for the 11th Five-Year Plan, since they are an important way of involving the broad masses of workers and production collectives in drafting 5-year plans and in achieving broader development of socialist competition in the form of counterplans. The speakers elucidated the role of socialist

competition and ways in which its forms can be further developed, treating it as a very important factor in effective fulfillment of multiannual plans. These topics were treated in the statement of P. F. Teterin (AUCCTU).

N. Ye. Smetanin (USSR Gosplan) and B. S. Kozin (USSR Gosplan) put emphasis on improvement of multiannual planning from the standpoint of comprehensive solution of problems and improvement of the system of indicators which are used for development of agriculture and transportation.

V. M. Ivanchenko (USSR Gosplan) spoke about improvement of the indicators of the plan (physical and value) and about making the economic mechanism and economic instruments more effective. N. N. Baryshnikov (USSR Gosplan) offered in his paper a number of recommendations for improving the planning of capital investments in order to increase the efficiency of social production.

P. K. Katsur (Volga Motor Vehicle Plant) discussed in his paper aspects of the multiannual planning of development of a production association.

Yu. V. Yakovets (Academy of the USSR National Economy) discussed the problems of multiannual price planning.

Section Entitled "Problems of Multiannual Planning of Scientific-Technical Progress"

V. S. Puzanov (State Committee for Science and Technology) presented the central paper on planning scientific-technical progress in the section. He noted that given the broad use of the method of special-purpose programs in planning scientific-technical progress, it is an exceedingly important task to use the technical-and-economic indicators of the plan to reflect more fully the structure and qualitative shifts in production resulting from scientific-technical progress. Aspects of further improvement of the comprehensiveness of the scientific-technical programs being drafted were also touched upon.

The paper of I. I. Ishchenko (USSR Gosstroy), devoted to the problems of planning scientific-technical progress in construction, raised the question of firmer coordination of all scientific research projects related to construction. In the opinion of USSR Gosstroy, the head scientific research institute should bear full responsibility for work along the particular lines of science and technology in capital construction, for comprehensive drafting of plans, and eventually for practical application of the results of scientific research. USSR Gosstroy intends to make the transition to such a system so that assignments for development of the production of progressive new materials in new types of construction are set accordingly in the section on new technology.

In his paper L. M. Gatovskiy (Economics Institute of the USSR Academy of Sciences) raised a number of questions concerning improvement of the effectiveness of the planning of scientific-technical progress, in particular,

ensuring the priority of technical progress in evaluation and incentive systems. The indicator of technical renewal of production ought to be a most important specific indicator. Planning and stimulation both of technology previously put into production and of technology being put into production ought to be differentiated. The speaker noted the need to carry comprehensive scientific-technical programs drafted by the State Committee for Science and Technology all the way to the stage of series production, i.e., the programs need to be oriented toward the final result.

A. I. Fedorovich (Belorussian Gosplan), a member of the collegium, spoke about the problems of improving the planning of scientific-technical progress in the regional section. The speaker said that an essential shortcoming of the present planning system is the absence from plans of assigned indicators that make it possible to evaluate the final economic results--the efficiency of outlays to introduce new technology and their impact on the principal technical-and-economic indicators of production. In the republic at the present time standardized planning forms and indicators are being introduced experimentally at a number of enterprises and industrial ministries in order to evaluate the level of local efficiency of particular measures to introduce new technology and their influence on the final results of production, as well as to outline ways of further improving the process of planned management of scientific-technical progress. V. G. Lebedev (Academy of Social Sciences of the CPSU Central Committee) touched on the problem of planning realization of the advances of the scientific-technical revolution and emphasized the advisability of a more straightforward definition of the place of the "Comprehensive Program of Scientific-Technical Progress and Its Socioeconomic Consequences" in the general perspective of the planned development of the scientific-technical revolution and creation of the material and technical base of communism, and he advanced the idea of the feasibility of forming within the USSR Academy of Sciences integrated departments of the engineering sciences with a view toward developing the natural-scientific and technical-and-economic conception of the material base of communism and also toward developing intersector models of systems of a new type.

The paper by Yu. A. Zykov (Economics Institute of the USSR Academy of Sciences) was devoted to the problems of the further development of the method of the special-purpose program in planning scientific-technical progress.

V. N. Fedyushkin (Ministry of Electrical Equipment Industry) spoke about the problems of planning scientific-technical progress in the electrical equipment industry. The Ministry of Electrical Equipment Industry considers it advisable for ministries, jointly with the State Committee for Science and Technology, to draft and approve a list of the testing facilities to be built and for USSR Gosplan to examine allocating capital investments earmarked for carrying out this measure.

It is notable that the speakers in the section included not only scholars, but also practitioners representing major associations and enterprises in

the country. For example, Z. N. Polyakov, director general of the association Plastpolimer, called attention to the need for balance among all sources of raw materials, which is possible if a more responsible approach is taken to planning introduction of the advances of science and technology in scientific-production associations. O. A. Korolev, director of the Krasnyy Proletariy Plant, discussed the difficulties in applying scientific-technical advances at the enterprise.

Much attention was paid in the section to the problems of planning scientific-technical progress in agriculture. They were the topic of A. A. Nikonov (VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin]) and B. I. Pushkus (Lithuanian Institute of Agricultural Economics).

A. A. Nikonov noted that the principal way of improving the planning of scientific-technical progress is the transition to the drafting of special-purpose programs oriented toward output of the end product. There should be such programs covering the production of grain, sugar, fruit and vegetables, meat, milk, and the products of the mixed feed and microbiological industry. Thought should also be given to regional comprehensive programs for increasing soil fertility, a comprehensive plan for transforming nature, which would be aimed at its conservation and the optimum economical utilization of resources.

B. I. Pushkus said that in Lithuania a set of measures has been carried out to improve the economic conditions of economic activity above all by regulating material and technical supply, by differentiating state purchase prices, and so on. As a result there has not been a single kolkhoz or sovkhos operating at a loss in Lithuania for 10 years now; all the farms are operating at a profit, the rate of profit is more or less uniform, and all the forms have more or less the same conditions for utilizing the achievements of scientific-technical progress.

A question of planning scientific-technical progress in the socialist and capitalist countries and of applying foreign advances in this field under our own conditions occupied an appreciable place in the work of the section.

O. T. Bogomolov (Institute of the Economics of the World Socialist System of the USSR Academy of Sciences) noted that the method of planning scientific-technical progress with the special-purpose program is being confirmed more and more in the CEMA countries as the most effective form of guiding scientific-technical progress and is ensuring concentration of energies primarily along the decisive lines of scientific research. In the European CEMA countries a radical change is taking place in the system for financing R&D projects: they are being put on a full cost-accounting basis. In all the CEMA countries the type of financing is changing continuously toward an increase in the share of internal resources and a simultaneous reduction of budget appropriations.

A second and equally important aspect of improving the planning of scientific-technical progress is planned price setting. In all the CEMA countries wholesale prices of new industrial and technical products are set as a rule so as to take into account the effectiveness of the consumer's use of the new products and includes a supplemental rate of profit in addition to its standard level. Socialist integration is affording the possibility of making optimum and effective use of the entire scientific-technical potential of the countries of the socialist commonwealth.

V. A. Nazarevskiy (Institute of World Economics and International Relations of the USSR Academy of Sciences) spoke about the organization of scientific-technical progress in the capitalist countries, its planning within firms and its regulation by the government.

Section Entitled "Scientific Bases of Planning Economic and Social Development"

The work of this section went along the following principal directions:

i. summarization of the results of development of socialist planning, analysis of historical experience in shaping the scientific foundations of planned economic management, of the most important advances of Soviet economic science, of development of forms and methods of its interaction with planning practice;

ii. solving the urgent scientific and practical problems of improving planning;

iii. full and comprehensive exposition of the advantages of socialist planning from scientific points of view, analysis and summary of forms and methods of using Soviet planning experience in the international community; enhancement of the effectiveness of criticism of apologetic bourgeois theories aimed at belittling the role of Soviet planning experience.

It was demonstrated in a number of communications by A. M. Rumyantsev and T. S. Khachaturov, G. A. Kozlov and V. N. Cherkovets that the birth of the science of national economic planning was objectively brought about by the victory of the Great October Socialist Revolution, by evolution of the socialist system and by its mode of production and social relations. This new science developed and became strong during the fulfillment of the 5-year plans and in the fight against various opportunistic theories.

The historical achievements of the science and practice of socialist planning were noted in many statements. It was particularly emphasized that these successes and this experience should be regarded not only as a matter of pride, but above all as a rich source from which scientific analysis can draw much that is instructive and constructive with a view to solving today's problems. In particular, G. A. Kozlov called attention to the fact that the methods of mobilizing the workers to perform the most complicated

tasks which were used in the first 5-year plans are relevant today. R. A. Belousov (Academy of Social Sciences of the CPSU Central Committee) revealed in his paper interesting aspects of the historical experience of improving the system of management of the national economy in the years of the first 5-year plans.

Much attention was paid to the theoretical and methodological problems of planning. A. M. Romyantsev devoted his paper to the methodological principles which constitute the theoretical basis of the science of national economic planning, described its subject matter and peculiarities, and concentrated attention on the most urgent problems. V. N. Cherkovets spoke in his paper about the basic role of political economy in development of the science of planning and about the need for the most complete study of all the economic laws of socialism in order to improve planned economic management.

It was noted that further improvement of planning necessitates first of all more thorough interdisciplinary study of the problems of advanced socialist society. Comprehensive study of the needs of society is taking on particular importance in this connection; it provides the basis for determining the structure of the national economy, its proportions, and, most important, the final and intermediate goals of economic activity. This principle was elaborated in a number of papers--A. M. Romyantsev, N. I. Alekseyev, V. F. Mayer and Zh. T. Toshchenko; they pursued the idea that particular attention should be paid to comprehensive study of man's needs, to justification of the standards and proportions that apply to consumption, to creation of the sum total of material and cultural conditions making for maximum display of man's creative activity, his harmonious development, and establishment of the socialist way of life.

Discussion of the problem of higher efficiency of social production occupied one of the central places in the work of the section. It was noted that efficiency should be regarded as a socioeconomic category from the standpoint of expanded reproduction, and its computation should be made in all stages of reproduction, including consumption.

In his communication B. P. Plyshevskiy (Science Division of the CPSU Central Committee) devoted attention to the problems of the fullest and most optimum use of production potential and all types of resources of the national economy. In the light of the decrees of the December (1977) and November (1978) plenums of the CPSU Central Committee, the speaker offered an analysis of ways of raising efficiency by virtue of saving on physical resources, reduction of losses and waste, improvement of utilization of industrial output in the sphere of consumption, noting that the methods of evaluating efficiency were worked out mainly with respect to selection of the best alternative for augmenting production, but do not answer the question of which is more advantageous--to increase the volume of production or to assign capital investments to improve utilization of the product once produced in the sphere of consumption? This makes it urgently necessary to

expand research on these problems and to work out appropriate methods on that basis.

In discussing the problems of raising efficiency it was emphasized that in preparing forecasts and plans of scientific-technical development not enough attention is being paid to economic justifications of the outlays required to carry out the particular technical-and-economic program nor to evaluations of results. A. A. Drobnis (Lithuanian Gosplan), I. G. Ustiyani (Moldavian Gosplan) and S. T. Begaliyev (Kirgiz Gosplan) devoted their papers to the practical problems of discovering and utilizing potential for raising efficiency.

N. N. Nekrasov (Council for Study of the Productive Forces of USSR Gosplan), A. A. Drobnis and S. T. Begaliyev discussed in their papers the problems of location of the productive forces, of improvement of regional planning and of combining regional with sector plans.

There was lively discussion of the scientific problems of social planning. M. N. Rutkevich, V. P. Mayer, Zh. T. Toshchenko and N. I. Alekseyev noted in their papers the steadily growing role of social factors in the development of production, the need to improve the planning of social processes, above all along the line of revising and expanding the group of indicators of the rise of the prosperity of the people which are assigned; the need for consistent enforcement of the principle that the indicators of the level of living must be specifically assigned; the need to supplement the group of assigned indicators with a set of indicators of social development; the need to increase the responsibility of central departments and councils of ministers of union republics for carrying out social programs and for performing measures envisaged by those programs within the assigned period of time.

The papers of R. N. Yevstigneyev (Institute of the Economics of the World Socialist System of the USSR Academy of Sciences) and Yu. M. Shvyrykov (University of the Friendship of Peoples named P. Lumumba) devoted their papers to the international importance of Soviet planning experience. They noted that planning principles are embracing ever more widely various aspects of the development of the socialist countries as well as their cooperation and the socialist economic integration of the CEMA member countries.

In his paper Yu. M. Shvyrykov also noted the tremendous impact which Soviet planning experience has had on the economic development of the liberated countries of Asia, Africa and Latin America.

Section Entitled "Planned Management and Improvement of Training of Supervisory Personnel for the Economy"

The papers of the following were devoted to the problems of training party and Soviet personnel and their economic training: N. Ya. Klepach (Popular Education Division of the CPSU Central Committee), L. N. Ponomarev (Academy

of Social Sciences of the CPSU Central Committee), L. N. Suvorov (Academy of the USSR National Economy) and V. A. Yatakov (Academy of Social Sciences of the CPSU Central Committee).

P. A. Skopetrov and V. G. Shorin (Academy of the USSR National Economy) presented papers on the theoretical problems of organizing social production, of development of the science of management and of personnel training in the field of economic theory.

A number of papers (P. T. Bunich, V. V. Laptev, B. F. Lomov, M. A. Korolev and A. V. Kolosov) were devoted to the problems of improving the economic mechanism and to related economic, social, legal and psychological aspects of the problem of training personnel for the economy.

A. I. Popov (RSFSR Ministry of Higher and Secondary Specialized Education) and O. V. Kozlov (Moscow Management Institute imeni S. Ordzhonikidze) spoke about improving the quality of the training of economists in higher educational institutions and about experience in training personnel with higher education in the field of management.

The papers of M. K. Poltev (USSR Ministry of Higher and Secondary Specialized Education), A. I. Rogov (Higher Economic Courses of USSR Gosplan), V. A. Zhamin (Economics Institute of the USSR Academy of Sciences) and A. P. Sakvarelidze (Academy of the USSR National Economy) were devoted to improving the system for improvement of the qualifications of supervisory personnel within sectors and regions and to improvement of the economics education of planning personnel.

N. S. Posun'ko, V. A. Kazantsev, M. M. Dermenshi and A. R. Franchuk took up the questions of improving the organizational structure of management of agricultural production, of planning in capital construction, of the organization of management in the agroindustrial associations, and of management of socialist competition.

The work of the section showed that our country has politically mature and highly qualified personnel who have mastered the rich experience in building the state and the economy acquired during the years of past 5-year plans, personnel capable of continuing on a still higher level improvement of the scientific foundations and practice in planning society's economic and social development, the further development of the methodology and organization of the multiannual planning of the country's socioeconomic development, acceleration of scientific-technical progress, and the problems of comprehensive planning of the economic development of republics and economic regions.

In the present stage of our development--in the stage of mature socialism, the principal task is to realize fully and derive maximum benefit from the capabilities which advanced socialist society possesses. To that end the following measures are necessary in systems for training supervisory

personnel of bodies for management of the national economy and systems for improvement of the qualifications of personnel in the economy:

i. assurance of the conditions for creative mastery of Marxist-Leninist theory, for thorough study of dialectical and historical materialism, the urgent problems of political economy and the party's economic strategy, scientific communism, the historical experience of the CPSU, the foundations of the theory of planned management and the collective experience in planned guidance of the CEMA member countries;

ii. teaching the students to think in economic terms, comparing costs to final results, to approach the performance of all tasks from the viewpoints of the national economy, achieving the highest efficiency and quality of performance;

iii. a good understanding of the nature and methods of planning, the mechanism for management of a socialist economy, mastery of the precision instruments of statistical analysis and the entire system of economic instruments and incentives; perfect knowledge of present-day methods and techniques of management; skillful use of mathematical-economic models, the methods of systems analysis and electronic computers, which are able to do so much;

iv. detailed study of the legal and sociopsychological methods of management, since management of the economy is above all supervision of people, the ability to understand their needs, to discover their abilities and interests and put them at the service of the common cause, to observe legality, to enforce exacting requirements and at the same time to find an individual approach to each person, and to create a healthy and creative sociopsychological climate in every collective;

v. thorough mastery of the Leninist style of working with people, skillful combination of basic knowledge, broad horizons and profound culture, the ability to combine use of the most recent advances of science and technology with the communist outlook, party devotion to principle and persistence, discipline and businesslike seriousness.

Section Entitled "Problems of Planning the Comprehensive Economic Development of the Union Republics and Economic Regions"

N. I. Maslennikov (RSFSR Gosplan) presented a paper in the section entitled "Problems of Planning the Comprehensive Economic Development of the Union Republics and Economic Regions." Discussion of his paper and also the papers delivered in the plenary session of the conference included statements by M. N. Timokhin (Academy of Social Sciences of the CPSU Central Committee), V. A. Gvozdev (Belorussian Gosplan), K. A. Akhmedov (Uzbek Gosplan), S. T. Takezhanov (Kazakh Gosplan), V. M. Kryazhkov (Presidium of the Department of VASKhNIL for the Nonchernozem Zone of RSFSR), F. D. Rustambekova (Azerbaijan Gosplan), Z. Sh. Aknazarov (Council of Ministers of Bashkirskaya ASSR), G. A. Tynspoyeg (Estonian Gosplan), N. F. Tatarchuk

(Krasnoyarskiy Kray Ispolkom) and V. P. Moshin (Central Scientific Research Economics Institute of RSFSR Gosplan).

The participants in the session devoted much attention to the coordinated and joint work of USSR ministries and departments and union republics on problems of regional planning and location of the productive forces, to enhancement of the responsibility of ministries, departments and gosplans of the union republics for the soundness of the location of production and capital construction, for optimum use of natural and manpower resources, and for environmental protection.

In the opinion of those who spoke, the experience of comprehensive economic planning of the union and autonomous republics, economic regions, krays, oblasts and cities shows that drafting sound plans and creating the necessary conditions for their successful fulfillment necessitates extensive improvement of the present system of regional planning.

Proposals were presented on revision of the Methodological Guidelines for Compilation of State Plans for the Union and Autonomous Republics, Krays and Oblasts; on expansion of the list of indicators of comprehensive plans for increasing the capabilities of complete analysis of the proportional and comprehensive development of the economy; on ensuring the scientific level of planning the formation of regional industrial complexes and industrial parks; on paying closer attention to theoretical research within the union republics and economic regions, and to other problems.

So that the ispolkoms of local Soviets of People's Deputies carry out the tasks in the planning field envisaged by the USSR Constitution and the constitutions of the union republics, it was recommended that steps be taken to enhance the role and strengthen local planning agencies.

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ECONOMIC POLICY, ORGANIZATION, AND MANAGEMENT

GUIDELINES FOR LOCATION OF PRODUCTION CENTERS ANALYZED

Moscow IZVESTIYA AKADEMII NAUK SSSR-SERIYA EKONOMICHESKAYA in Russian No 2, Mar-Apr 80 pp 87-97

[Article by V. V. Ketov: "The Economic Essence of the Principles Underlying the Location of the Productive Forces (Theoretical Problems)"]

[Text] Based on the analysis of the economic essence of the "location principles," the article defines them, classifies them and investigates ways of reflecting qualitative requirements regarding location principles in indicators of the economic effectiveness of capital investments.

With the expansion of the scale of construction and the increased complexity of production relations, the importance of scientific substantiation of decisions on the location of branches of the national economy is enhanced and the role of theory in this field of knowledge becomes increasingly important.

In the first years of its existence, the Soviet state was confronted with the need to resolve the problem of the rational location of the productive forces. The change in the form of ownership could not lead to a sharp turnabout in ideology and therefore economic thought was in some measure left in the thrall of previous ideas and under the new conditions it was necessary to articulate a scientific approach that would take the interests of the national economy as a whole into account. The historical situation compelled us to surmount the contradictions between the practical demands of socialist construction and the level of scientific development. This difficult problem was resolved by V. I. Lenin's elaboration of scientific principles governing the rational location of the productive forces which were conceptualized in the economic literature in the form of location principles.

In the long years that "location principles" have been used in economic literature, the meaning of the term was not actually defined. V. F. Vasyutin noted this state of affairs back in 1955: "While broadly using this term, authors do not define what they mean when they speak of principles. Do they refer to the objective patterns underlying the location of production or to party and government policy on the location of production? The result of this lack of clarity is that in the list of location "principles" we often

see objective patterns, elements of the economic policy of the party and the government, and even individual factors that influence the location of production."¹ Numerous attempts since the mid-1950s to explain the economic essence of the principles have not led to the solution of the problem and therefore various authors continue to advance a large number of different formulations of the principles; they continue to equate them with the economic laws (patterns) and factors underlying their location. The absence of a generally accepted terminology for various phenomena in science cannot be considered a normal situation and hence the waning interest in the economic essence of location principles in recent years is lamentable.

Marxist philosophy holds that if a name is assigned to some general property that is detected in a number of phenomena that is not described in terms of previously known phenomena, the concept is still not formulated. Researchers assigning the term "location principles" to certain general phenomena in the location process have not succeeded in proving its basis and hence the present problem is to use analysis as the basis for formulating the concept of 'location principles,' i. e., to reveal their economic essence and internal logic. At the same time, we must use the experience and attainments of the economic thought of preceding years.

The view of most researchers boils down to an understanding of the principles as the basis that should be followed, as a unique instrument for controlling the location of the productive forces. But analysis of the various points of view permits us to conclude that the "characterization" of this instrument is vague.

At the same time, some pronouncements can serve as the basis, as the point of departure in the solution of the given problem.

Interesting ideas have been expressed, e. g., by Ye. I. Sandler. He believes that even though the location principles are conditional upon the action of objective economic laws, they must not be equated with the latter since social production always takes place in the unity of objective and subjective factors. Hence the principles are the "concretization of the requirements of the economic laws of socialism with regard to one of the most important aspects of development of social production: the spatial location of the productive forces."²

Sandler comes close to concluding that the principles are a complex phenomenon that combines both objective and subjective principles. There is evidently a rational element in such a conclusion but since the work does not indicate the basis for "concretizing the requirements of the economic laws" in substantiating the location principles, the basis for a rigorous scientific formulation of their requirements remains unclear. From Sandler's explanation it follows that it is sufficient to know the action of the laws in order to concretize them to the point of a principle. But the concrete is manifested in the wealth of relationships, which raises doubt as to the possibility of explaining internal logic as a means of considering the demands of the economic laws and prompts us to think of the broad spectrum of other phenomena considered in the principles.

Ya. G. Feygin has reflected at length on the economic essence of the principles but in his works has not succeeded in formulating it precisely. In one instance, Feygin wrote that the principles "are the most complete reflection of the objective patterns of socialist production"³ and that the "patterns and principles of the socialist location of production are in a specific correlation."⁴ He has also stated that the principles are based on "patterns of location of production."⁵ It remains unclear whether the principles reflect the patterns of production, the patterns of location, or both. But he has an idea that should be developed. In formulating his list of location principles, Feygin wrote that individual principles are determined "on the basis of objective economic patterns of socialist production and the general tasks of communist construction in our country."⁶ While he does not directly indicate the internal content of the principles here, he does name the prerequisites for advancing certain location principles. Such prerequisites must necessarily be the internal content of the principles, otherwise the principles would be divorced from the prerequisites that occasion them. From this it follows that in addition to the economic laws, the "general tasks of communist construction" are the internal content of the principles. Later, Feygin clarifies his idea by saying that these principles are based on the general tasks entailed in the construction of the material and technical base of communism.⁷

Opposition to ascribing a special role to location principles was expressed by A. Ye. Probst who believed that the principles of socialist economic planning "are only another formulation of known economic laws in action."⁸ However, G. A. Rusansev countered Probst by saying: "The principles underlying the location of production cannot be equated with the laws if only because they do not always correspond to the laws."⁹ A. Ye. Probst's errors consist in his ignoring of the complex character of location principles. However, his statement that the principles are a manifestation of the action of economic laws merits attention.

An interesting interpretation of the economic essence of the principles was offered by L. A. Kozlov: "the principles governing the rational location of the productive forces are conclusions drawn from the cognition of the objective laws of the territorial division of labor with regard to the concrete historical situation and the economico-political tasks of a given stage. Rational location principles are concrete forms of guidance to action in the planning processes."¹⁰ It is to Kozlov's credit that his definition is based on the complex character of the principles and points to the relationship between the principles and the concrete historical situation and the next economic and political tasks on the agenda. However, it is impossible to agree with this definition entirely. The principles cannot take into account the economic laws that are operative within society. It can be said that the principles are based on "conclusions from the cognition of the objective laws governing the territorial division of labor" after the given laws are discovered.

Such are the views of individual research on the economic essence of the location principles. In actuality, these views are more varied and contradictory.

Any scientific concept is a complex of knowledge and hence it is possible to offer a more concrete definition of location principles by penetrating its essence and content and by ascertaining the correlation of individual elements in this concept. This is an important methodological condition in understanding the economic essence of location principles. It is necessary not only to determine within the location principles the elements that distinguish them from other economic categories but also to detect the distinguishing features that would reveal their economic essence to the utmost. After mentally dividing the location principles into their basic elements, we must then collect and synthesize these elements into a unified whole and depict them in the form of a formulated definition of the concept of principles.

The "location principles" concept, i. e., the principles that should be followed in locating the productive forces, must necessarily include social aims. The location of the productive forces is one of the aspects of the organization of production and specifically the territorial organization of production. Under socialism, it entails the location of production in accordance with the economic laws existing in society. The location of production occurs under the action of the aggregate of economic laws. It is possible to single out at least three laws that determine the character of location of socialist production: the basic economic law; the law of planned, proportional development of the national economy; and the law of steady growth of labor productivity. Other economic laws must also be taken into account in the substantiation of the principles. The basic economic law of socialism, the content of which is the more and more complete satisfaction of the material and nonmaterial requirements of society's members, expresses the essence of the given mode of production and necessarily influences the means of distributing the productive forces throughout the nation. This law is taken into account in the location principles and gives them their socioeconomic orientation.

But economic laws are not merely a part of the concept of location principles. The principles concretize the requirements of the laws of socialism with regard to the geographical distribution of the productive forces and thereby form the territorial division of production. "This is why we consider erroneous and unjustified the attempts of a number of authors to form the principles of location of the productive forces without regard to the demands of the objective economic laws or to present the general requirements of these laws as the concrete principles of location of the productive forces, and thereby essentially deny the specific features of spatial development of social production." 11

However it must be admitted that the consideration of economic laws in the location principles is not as direct as it may appear. The laws governing the territorial division and integration of social labor, which must necessarily be determined by the social conditions of production, influence (must influence) the formation of the principles. Individual economic laws of social production are probably considered in the principles indirectly through the laws governing the territorial division of labor. Laws governing the territorial division of labor should evidently be included in the concept of location principles in addition to the most general laws of social

development. It is not by chance that some researchers believe that location principles are "conclusions from the cognition of objective laws governing the territorial division of labor," but it can hardly be said with certainty that the location principles formulated under current conditions take these laws into account quite completely. We can obviously speak of the probabilistic character of such consideration since the laws governing the territorial division of labor and their relationships are not yet well known.

If the content of location principles were confined solely to the cognition of economic laws, in some measure they would only serve as a different formulation of known economic laws in action. But this is not enough to formulate the basis for the practical control of the location of the productive forces. Not a single society is free to choose the modes of location of the productive forces. The history of their development is the history of the forms of territorial organization of production since the latter depends to a considerable degree on the level of development of the productive forces which determine the technical and economic aspect of the location of production.

In the foreword to "A Critique of Political Economy" [K kritike politicheskoy ekonomii], K. Marx wrote: "Mankind always poses to itself only problems that it can solve since upon closer examination it always turns out that the problem itself arises only when the material conditions of its solution are already at hand or at least are in the formative process."¹² This situation also holds true with regard to the location of the productive forces. In the practice of socialist construction, the decision regarding the universal development of the fuel industry can be explained only by the relatively low level of transport and the absence of information on major deposits of effective fuel (oil, gas) discovered in subsequent years."¹³

In order to substantiate practical activity, it is necessary to consider the existing level and the task of securing the further development of the productive forces. However, understanding of the economic laws of socialism, of the level and further tasks of development of the productive forces does not make it possible to formulate demands regarding their location. This is not enough for the final selection of the variant. The principles governing the rational location of the productive forces must determine the sociopolitical consequences of location not only in the current historical period but in the future as well.

We have thus elicited three relations that are encompassed by the concept of location principles: conclusions based on the cognition of economic laws, the level and tasks of development of the productive forces, and the sociopolitical tasks of the state. Whether or not these relations are equal, whether they are of greater or lesser significance is a very important question. Much in the understanding of the economic essence of the principles depends on the correct solution of this question.

The correlation of individual elements of the principle may obviously vary. Everything depends on the final goal that the principle should express. There may be numerous principles of varying nature and content. Any practical worker reaches an economic decision on the basis of a principle that forms within him on the basis of his personal experience and knowledge, and his own understanding of the concrete situation. The problem of economic science's definition of location principles arises because it is impossible to rely on the intuitive, empirical approach to the logic of their formulation. Under modern conditions, incorrectly situated enterprises may substantially increase socially necessary expenditures in the national economy. In practical activity, the scientifically substantiated principle is convenient because it tells much in a few words, but at the same time is the result of much research work.

F. Engels wrote: "principles are not the point of departure in research but are the concluding result; these principles are not applied to nature and to human history but are abstracted from them; it is not nature and mankind that conform to the principles but rather the principles that conform to nature and mankind; the principles are true only insofar as they correspond to nature and history. Such is the only materialistic view of the subject."¹⁴ At the same time, it is important to note that in the understanding of F. Engels, the essence of the principles is objective, but at the same time he did not equate the principles with the laws of nature and society.

It is appropriate to say, for example, that the securing of the "steady growth of the productivity of social labor" is a location principle.¹⁵ Outwardly, this principle is a "different formulation of known economic laws." In the example cited, the obvious winner is the side that is called upon to express the objective basis of the principles. Principles of this type express the most general requirements of the economic laws.

It is difficult to find traits that characterize historical tasks regarding the development of the productive forces and the concrete socio-political tasks of the country since the raising of the productivity of social labor is the task of the socialist state under all historical conditions. But for all that, the concepts of the economic law and the principle must differ from one another. The law is more of an abstraction than the principle. The law of increasing labor productivity does not presuppose the modes and conditions of observance of the action of the law. This can express other laws or scientifically developed and practically applied techniques for the management of the national economy which do not contradict the requirement of the economic law but make it possible to use it. If an economic law presupposed the means of observing its own action, it would not be a law since it would "mechanically" lead to the necessary goal.

The principle is more concrete and therefore it operates differently. If the basic law of socialism became the principle of economic management, this would mean that the development of the productive forces and the solution of socio-political and other problems confronting the state would result in

the more complete satisfaction of the material and nonmaterial requirements of members of society, since such problems always exist and unless they are resolved it will be impossible to reach the goal. Consequently, the internal difference between economic laws and principles consists in the fact that the law does not express the concrete action of the subject while the principle, on the other hand, presupposes a concrete action and therefore takes into account the possibilities and resources for attaining various goals. This is why A. Ye. Probst was right when he noted the feature of location principles to reflect economic laws in action.

In principle, demands on the development of the national economy or for the solution of the state's socio-political problems, that cannot be connected with economic laws or with tasks in the development of the productive forces, may be a most important feature. If for example we take the principle of accelerated development of the industry of the national hinterlands to the level of the leading regions, in the first years of socialist construction this principle was dominated by the state's socio-political tasks stemming from the new social conditions of production.

To be sure, the location of industrial production in former hinterlands of tsarist Russia cannot be viewed solely as a means of resolving the social problems of these regions of the nation. The location of industry in these regions was favorable from the standpoint of bringing production closer to the sources of raw materials and regions in which the final product was consumed, which meant a saving of social expenditures of labor. But there were conditions that made it difficult to locate productive forces in these regions. They lacked skilled workers, engineers and technicians; they lacked a developed industrial infrastructure; they were afflicted with strong vestiges of the past which necessarily affected the economic effectiveness of the construction of enterprises.

The socialist state was therefore compelled to make temporarily higher expenditures which on the one hand served the attainment of the given social goals and on the other hand created favorable conditions for the development of the productive forces in the future. Accordingly, the accelerated development of industry in the national hinterlands in order to raise it to the level of the leading regions dealt with two problems but primarily resolved socio-political problems.

From the analysis it follows that out of the entire aggregate of relations encompassed by the concept of "location principles," it has major significance and determines the character of one or another principle.

The principles that are primarily intended to express the demands of economic laws or the demands made upon socialist construction determine the most general tasks that are placed before planning agencies, scientific research and project-planning institutes with regard to the location of the productive forces. The internal logic of such principles makes it possible to formulate a considerable number of them. However, an increase in the

number of principles makes it difficult to control location. Therefore, the principles developed by science for practical use in the territorial organization of production must express the most important demands on the location of the productive forces in a given stage in history.

N. N. Nekrasov successfully formulated this type of principle. He writes: "The general principles of planned location of socialist productive forces include: the continuous improvement of the territorial division of social labor; the attainment of a high degree of economic effectiveness of social production based on the rationalization of the location of material production and the planned formation of the regional economy; and the maximum increase in the comprehensive approach in the economy of various economic regions throughout the country. Essentially, these general principles underlying the location of the socialist productive forces fully encompass the goal-oriented tasks and direction of location of material production in a socialist planned state."¹⁶ The criterion of the formation of this group of principles is that they "encompass goal-oriented tasks and the direction of location."

But it is not enough merely to know the general principles in order to solve the problems confronting the nation's economy. Therefore, it is necessary to single out another group of principles that serve as concrete guidance in the territorial organization of production, that reflect new and important phenomena in the methods employed in siting the productive forces. The answer to these questions must be given by principles that are directives governing the planned location of the productive forces. Such principles must serve as a concrete guide to the compilation of plans and forecasts and must in concise form express the action program. Accordingly, concreteness in recommendations on the spatial development of the productive forces must become the criterion for singling out this group of principles. An additional feature is their directive character which must be given by the appropriate normative documents. Such character of the location principles is predetermined by the directive nature of plans for the development of the national economy.

Principle-directives must essentially be "microplans" (if we proceed not from their content but from brevity of expression). The directive character of the principles does not mean that all branches of the national economy must be subordinate to their demands. From this it merely follows that planning agencies, scientific research and project-planning organizations must seek to locate the productive forces in the direction established in the principles. The selection of branches of the national economy for the observance of the demands of principle-directives is based on the consideration of factors of location and economic evaluation of the effectiveness of location on the basis of mathematical models. Accordingly, principle-directives have a limited sphere of action.

Applicable to the present time and the immediate future, the following are principle-directives: (1) the enhancement of the economic potential of regions of Siberia and the Far East; and (2) the location of enterprises in small towns and medium size cities having favorable conditions.

The location of the productive forces in Siberia and the Far East resolves the problem of effectively drawing the vast natural wealth of these regions into economic circulation. In addition to the accelerated development of the natural resources (oil, gas, coal, nonferrous metals, etc.), there will be accelerated development in the petrochemical and chemical industry, in the production of aluminum, in ferrous metallurgy, in machine building, and in other branches of the manufacturing industry. The location of enterprises in small towns and medium size cities must resolve the problem of totally involving the able-bodied population of these cities in social production and of avoiding the excessive concentration of industry in large cities which leads to negative economic and social consequences.

General location principles justly characterized by N. N. Nekrasov as encompassing "goal-oriented tasks and the direction of location of material production" do not predetermine the solution of such concrete tasks with regard to the growth and improvement of the productive forces and therefore their demands must be taken into account in implementing the demands of principle-directives and in all other instances in the territorial organization of production. Accordingly, these groups of principles differ from one another just as the goal differs from the means of attaining it.

From all the foregoing it can be concluded that the principles governing the location of the productive forces are conclusions from the cognition of the economic laws of socialism, the levels and tasks of development of the productive forces, and the socio-political tasks of the state in a concrete historical situation which takes into account their manifestation in the territorial organization of production.

General principles express the historically most important directions and goals of location of the productive forces while the principle-directives -- means of resolving the most important national economic problems -- are one of the means of attaining the demands of the general location principles.

Thus, analysis made it possible to discover the basic features of the economic essence of location principles, the ascertainment of which is important in the light of the major efforts that are presently undertaken to improve the methods of planning and managing the national economy, which require precise scientific characterizations of various economic categories.

Under current conditions, it is also important to find means of expressing qualitative characteristics in objective quantitative parameters. V. S. Nemchinov wrote that "the main task of economic science is to bring the elaboration of rational location principles to a degree of concreteness and quantitative determinacy that would facilitate the comparison of variants of location of productive forces on the basis of thoroughly determined economic criteria."¹⁷ In other words, it is necessary to find means of reflecting the influence of principles on indicators of the economic effectiveness of location.

The determination of the economic effectiveness of location must be based on general methods specified in Guidelines for Determining the Economic Effectiveness of Capital Investments. At the same time, location is a specific area of economic activity which requires the elaboration and consideration of a large number of particular questions.

Location principles are the main basis for elaborating and implementing the strategy of locating the productive forces. But their economic essence is such that it is difficult to subordinate branches of the national economy to the influence of their requirements. In the territorial organization of production, scientific research and project-planning institutes are often based solely on the demands of location factors and ignore location principles. Modern methods used in the quantitative evaluation of economic effectiveness reflect production indicators but do not sufficiently consider the socioeconomic consequences of the location of new production facilities.

The application of the lower normative coefficient of effectiveness in calculations of discounted costs for enterprises situated in regions of the Far North in individual branch guidelines on the determination of the economic effectiveness of capital investments is essentially the quantitative expression of the principle of preferential location of enterprises in Northern regions. The application of a lower coefficient of effectiveness results primarily in variants that are more capital-intensive. A lower norm is applied because the Northern regions are not sufficiently developed in an economic sense and therefore the consideration of all conjugate outlays and the influence of natural and climatic conditions lead to the relative increase in the volume of capital investments in these regions in comparison with similar construction in other regions of the nation. However, such an approach is not entirely correct with regard to method. The location of enterprises in the North can sometimes lead to higher current costs as a result of the natural-climatic features of that region and the higher wage costs.

It is also possible to take a more definite approach to the determination of the quantitative expression of location principle-directives. The interests of the national economy require that these principles be taken into account in the territorial organization of production. However, ministries and agencies do not always observe the location principles particularly when new regions are involved. Hence the coordination of branch interests and public interests requires the levelling out of the influence of temporary one-time expenditures and of current branch expenditures. The "levelling out process" must be within reasonable limits and must not impede the development of the national economy. It should be noted that the losses of social labor in the location of production facilities are by no means obligatory and that such losses can be avoided. Under present conditions, the observance of demands to locate enterprises in small towns and medium size cities frequently results in losses of labor expenditures. We know that the excessive concentration of production in large cities has negative economic and social consequences. However, construction in small towns and medium size cities involves certain

difficulties that in some instances can be fully overcome only at the expense of temporary losses of social labor expenditures (in theory, the possibility of these losses should be assumed even if the methods used to calculate the economic effectiveness of capital investments were more sophisticated). The magnitude of these losses can be expressed in the form of the interest based on discounted costs according to the enterprise location variant which takes the demands of the principles into account.

In world economic practice, there are examples of the stimulation of the siting of production in regions which for social reasons require the development of productive activity in them. The governments of some capitalist countries confer tax exemptions and other incentives for operating enterprises in such regions. While the use of a special percent of losses of effectiveness in discounted costs is supposed to perform the same role, i. e., to encourage the siting of the productive forces in Siberia and the Far East and in small towns and medium size cities, its action is more general. What is more, the special norm for losses makes it possible to avoid in some measure shortcomings in the pricing system which does not take the valuation of natural resources into account.

With regard to the special norm of effectiveness of location, the formula of discounted costs takes the form:

$$\Pi = (C + E_s K) \cdot \left(1 - \frac{H_s}{100}\right),$$

where H_s is the special percent of losses of economic effectiveness resulting from the observance of principle-directives.

The capital investment variant which takes the demands of the principle-directives into account must pay off by the deadline and the profit received by the enterprise must ensure that the necessary payments will be made to the budget and to the economic incentive funds.

The special norm for losses must be established for each individual principle. The question naturally arises: how can permissible magnitudes of losses of effectiveness (H_s) be determined? These magnitudes can be ascertained on the basis of the comparison of losses of effectiveness at the time of completion of construction of a production facility and the long-range excess (e. g., due to the more complete utilization of the industrial and social infrastructure, etc.) over the established normative effectiveness of capital investments (fixed capital).

The present level of development of the productive forces and the task of further rationalization of the location of the national economy require the development of new approaches to the solution of problems of territorial organization of production. The quantitative evaluation of the influence of principles on indicators of the effectiveness of location can become just one of the methods used to improve the management of location processes.

FOOTNOTES

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11. Ye. I. Sandler, *Op. cit.*, pp 99-100.
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13. N. A. Shokin, "Methodological Problems in the Location of a Branch of Industry" [*Metodologicheskiye problemy razmeshcheniya otrasli promyshlennosti*]. Moscow, "Nauka," 1971, p 6.
14. K. Marks and F. Engel's, *Op. cit.*, vol 20, p 34.
15. Ya. G. Feygin, "The Location of Production Under Capitalism and Socialism," p 208.

16. N. N. Nekrasov, "Problems of Regional Economics" [Problemy regional'noy ekonomiki]. Moscow, "Mysl'," 1974, p 11.
17. V. S. Nemchinov, "On the Rational Location of the Productive Forces," VOPROSY EKONOMIKI, No 6, 1961, p 13.

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PLANNING AND PLAN IMPLEMENTATION

NEW PLANNING INSTRUCTIONS DETAILED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 3, Mar 80 pp 126-128

[Article: "Methodological Instructions on the Procedure for Determining the Intensity of Plans"]

[Text] With its 15 January 1980 decree Gosplan USSR approved the Methodological Instructions on the Procedure for Determining the Intensity of Plans. They contain the basic propositions which are designed to evaluate the level of the intensity of the five-year and annual plans which are worked out by production associations and enterprises.

1. The tasks in determining the intensity of the five-year and annual plans which are worked out by the labor collectives of production associations and enterprises are:

- a) ensuring a further increase in production and its efficiency, an intensification of the economy, and an improvement of output quality;
- b) an evaluation of the degree of the correspondence (approximation) of plans to the norm requirements;
- c) the discovery of production reserves and the adoption of counter-plans and socialist commitments which ensure an increase in the intensity of the plans of each production association and enterprise to the level of advanced associations and enterprises;
- d) consideration of the level of plan intensity in determining the amounts of the economic stimulation funds and summarizing the results of socialist competition.

2. A plan which ensures the fulfillment of the established assignments and an efficient use at the normative level of production capacities and expenditures of material, labor, financial, and other resources is considered to be an intense one.

The above-mentioned normative level is calculated on the basis of a system of progressive scientifically substantiated technical and economic norms and normatives.

3. The initial base for determining the intensity of a plan is made up of the profile document of the production association and enterprise, the system of progressive norms and normatives, the control figures and the assignments approved by a superior organization, and an analysis of statistical and accounting data.

4. The system of indicators which are used in evaluating the intensity of a plan of a production association and enterprise includes, as a rule, indicators from among those which are approved by a superior organization, and also other indicators which are of great importance for increasing production efficiency and improving the quality of work:

- a) the use of production capacities (areas);
- b) labor productivity (output per worker);
- c) the proportion of highest quality category output (or other output quality indicators);
- d) output costs (profits based on reducing the cost of output).

When necessary, such indicators as the following may also be included in the system of indicators: equipment shift coefficient; equipment work load; return on capital (overall or on the active part); material intensiveness of output) or specific expenditure per unit of capacity (work), and also indicators which are specific for a given branch or production.

5. The level (coefficient) of the intensity of a plan (K_H) for a corresponding indicator is determined by means of dividing the planned magnitude of the planning indicator (A_p) by its normative value (A_H):

$$K_H = \frac{A_p}{A_H}$$

6. The calculations to evaluate the intensity of a plan of a production association (enterprise) are performed at all of the stages of its development.

An example of a calculation of the coefficient of plan intensity for the use of production capacities is cited below.

[Table following page]

Products	Net Output Normatives	Planned productions of output, A_p		Average annual Production Capacity, A_H		Intensity coefficient, K_H	
		In Physical Terms	In Value terms, Thousands of rubles	In Physical Terms	In Value Terms, Thousands of rubles	In Physical Terms	In Value Terms, Thousands of rubles
A...	1 500	810	1 215	900	1 350	0,91	0,91
B...	1 800	930	1 674	1 100	1 980	0,85	0,85
C...	950	230	220	260	247	0,89	0,89
Annual Total		3 109		3 577		0,87	

*When there is no net output normatives the wholesale price of a unit of output is used.

7. The coefficient of plan intensity is a computed analytic indicator. The optimal value of the coefficient of plan intensity is equal to one.
8. The intensity of a plan is evaluated primarily for a leading indicator (in individual cases, for two leading indicators), while the levels of the remaining indicators are computed as additional evaluation criteria. When necessary and possible, groups of individual indicators may be used.
9. The composition of the basic evaluation indicators of plan intensity is established by a superior organization in relation to the concrete tasks of a branch and specific nature of a given production.
10. For each indicator which is adopted as a criterion for an evaluation of plan intensity the branch methodological instructions have to cite the methods of determining the normative magnitudes and the procedure for approving them.
11. The composition of the evaluative indicators of the intensity of planning assignments for shops, sections, teams, and jobs is determined by the management of the production association (enterprise) in conformity with the system of indicators which has been established for the production association (enterprise) as a whole with regard to the special characteristics of production.

12. In calculating the value of a coefficient of plan intensity the point of departure should be the indicators of production volume (output, fulfillment of work) which have been adopted for the development of the plan with regard to the fullest reflection of the labor expenditures of a given collective (normative labor intensiveness, physical measurers, normed net output, normed processing costs, and others).

13. In order to constantly increase the intensity of a plan and obtain the maximum possible intensity value in the five-year and annual plans production associations (enterprises) work out measures which ensure the necessary growth of production, an increase in its intensification and efficiency, a strengthening of the regimen of economy, and an elimination of losses.

It has to be kept in mind here that measures which at the same time lead to an increase in production capacities must also ensure additional output production (services). Counter-plans, socialist commitments, rationalizers proposals, and inventions should play an important role in increasing the intensity of plans.

14. In individual production associations and enterprises the indicators of the system of plan intensity may be compared with the achievements of advanced enterprises with an analogous production character before the creation and approval of the normatives which are employed in evaluating intensity. In this case there will be a relative (comparative) plan intensity which is obtained by means of dividing the indicator of a given enterprise by the progressive magnitude of the corresponding indicator of the association (enterprise) of the above-mentioned group. The level of the plan intensity for the advanced enterprise which is taken as a standard is calculated on the basis of the assignments and measures stipulated in its plan.

15. The determination of the intensity of a plan is performed in the following procedure:

a) a refinement is made of the data of the production association (enterprise) as of the beginning of the planning year, including the technical and economic indicators and the expenditure norms for all types of resources;

b) a calculation is made of the influence on the passport indicators and on the normative base of the enterprise of measures provided for in the draft plan (and in the plan), especially for the section "The Technical and Organizational Development of Production" (the creation and mastery of new types of output, the introduction of progressive technology, mechanization, and automation, an improvement of planning management and organization, the introduction of scientific labor organization, the development of auxiliary production, and so forth);

c) the amounts of the commissioning and decommissioning of fixed capital and production capacities stipulated in the draft plan (and in the plan) are established, and the levels of the mastery of planned and technical and economic indicators and normatives for new (reconstructed and reequipped) objects and capacities are refined;

d) the average annual values in the five-year plan and the average quarterly (in individual cases, average monthly) values of the normative indicators in the annual plans are determined in accordance with the adopted system of indicators for evaluating plan intensity.

16. The calculation of production capacities is performed in accordance with the Basic Regulations on Calculating the Production Capacities of Operating Industrial Enterprises and Production Associations (Combines) which were approved by Gosplan USSR and the USSR Central Statistical Administration on 13 January 1977 (No. VL-1-D/4-66) and with the branch instructions which have been developed on their basis.

At enterprises whose planned capacities (or individual facilities) are in the stage of mastery the normative capacity is calculated in accordance with the Methodological Instructions on Determining the Norms for the Duration of the Mastery of Planned Capacities and the Economic Indicators of Industrial Enterprises and Objects Which are Being Commissioned which were approved on 29 March 1979 by Gosplan USSR.

Upon the expiration of the normative mastery periods the normative capacity is determined as for operating capacities, regardless of the level of its actual use.

17. The intensity levels of the five-year plan which have been computed on the basis of scientifically substantiated normatives and norms may subsequently, during the course of their fulfillment, be refined in the annual plans on the basis of the influence of counter plans which have been adopted, and also basic technical and economic factors on a change in plan intensity. Such factors are united in the following groups:

- a) a rise in the technical level of production;
- b) an improvement of the management and organization of production and labor;
- c) a change in the volume and structure of output;
- d) an improvement of the uses of natural resources;

e) branch and other factors.

18. The discovery and use of reserves for increasing the intensity of plans has to become one of the most important conditions of the socialist competition of the labor collectives of production associations and enterprises, of their production subdivisions, and of the personal commitments of collective members.

In order to increase the interest of labor collectives in developing and adopting intense plans, the level of intensity is considered in evaluating their performance and in summarizing the results of socialist competition.

For this purpose, a list of measures for whose accomplishment rewards are given is worked out at enterprises and production associations for various categories of workers.

19. The level of plan intensity is considered in forming and making use of the material incentives funds in accordance with established General Regulations and the procedure for the formation of these funds.

20. In accordance with the present methodological instructions, ministries and departments work out and approve branch methodological instructions on the procedure for determining the intensity of the plans of production associations and enterprises in a given branch in which there is a reflection of the specific characteristics of their work, and they cite calculation examples and make other necessary recommendations.

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2959

CSO: 1820

INDUSTRIAL DEVELOPMENT AND PERFORMANCE

IMPROVED FINANCING OF RENOVATION, RETOOLING URGED

Moscow DEN'GI I KREDIT in Russian No 3, Mar 80 pp 44-47

[Article by Candidate of Economic Sciences V. A. Gnatov and S. D. Yurchenko:
"The Financial Backing of Retooling"]

[Text] A policy of increasing the proportion of capital investments in the renovation and retooling of operating enterprises on the basis of the utilization of the achievements of scientific and technical progress, which should ensure a substantial increase of the proportion of the expenditures on the active component of fixed capital, reduce the assimilation time of production capacities and promote the acceleration of the output of new types of products at operating enterprises, was adopted in the decisions of the 25th CPSU Congress and the subsequent CPSU Central Committee plena.

The need to provide in the plans for the priority allocation to associations and enterprises for these purposes of material resources and equipment, as well as the necessary limits of capital investments is indicated in the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality."

During the 10th Five-Year Plan by means of the priority implementation of the retooling and renovation of operating enterprises it is envisaged to obtain more than half of the increase of capacities in such sectors as coal mining, the production of pig iron, gas and steam turbines, instruments, furniture, cable products and others.

Practice indicates that the outlays on the retooling and renovation of operating enterprises are notable for great effectiveness. A reduction of the specific capital investments per unit of capacity (from 10 to 25 percent) is being ensured, the period for increasing the capacities and recovering the expenditures are being shortened. Here the technical improvement and modernization of production with the minimum outlays on the reorganization of buildings make it possible to increase the effectiveness of capital investments by 8-10 percent as compared with new construction.

For example, the retooling of the Minsk Worsted Combine made it possible to increase the output of commodity production by 39 percent and the profit by 42 percent, to decrease the outlays per ruble of commodity production by 18 kopecks and to increase labor productivity by 57 percent.

At the same time the advantages of such forms of the reproduction of fixed capital as retooling are not being fully utilized. This is connected first of all with the fact that frequently expansion or new construction is carried out under the guise of retooling and renovation. Thus, the analysis of the effectiveness of the capital investments of 51 construction projects of the Ukrainian SSR Ministry of the Construction Materials Industry showed that the proportion of the expenditures on equipment in the total outlays on retooling in 1977 was only 35-39 percent and for the Mukachevo Construction Ceramics Plant 16 percent.

When renovating the enterprises of the Ukrainian SSR Ministry of Installation and Special Construction Work the value of the active component of the productive capital in 1976 was 25 percent as against 33.5 percent in 1971.

This situation had the result that, for example, at the Zhdanov Metal Component Plant the yield per ruble of fixed production capital decreased considerably and in 1976 was 4.5 kg of metal components as against 7.7 kg in 1971. It is quite obvious that measures with such a high proportion of construction and installation work must not be assigned to the renovation and retooling of operating enterprises.

In 1975 USSR Gosplan and USSR Gosstroy elaborated and approved the composition of the operations and outlays, which pertain to retooling, renovation, expansion and new construction. According to the instructions retooling presumes mainly the updating of the active component of the fixed capital and involves the introduction of new equipment and technology, the automation and mechanization of production processes, the modernization and replacement of obsolete and worn out equipment with new, more production equipment, the elimination of bottlenecks and the improvement of the organization and structure of production and plantwide management. Retooling is carried out, as a rule, in accordance with plans and estimates for individual measures and does not envisage a significant amount of construction work. Mobility, efficiency and quickness in accomplishment are typical of measures of this type.

The replacement of obsolete and worn out equipment with new, more productive equipment, the installation of additional equipment on existing areas, the modernization of operating equipment, which is aimed at the increase of the technical level of production, the adoption of advanced technology, the automation and mechanization of production processes and the improvement of labor organization and working conditions should obviously be recognized as the main content of the capital outlays on the retooling of operating enterprises.

The replacement of equipment and its modernization yield an appreciable national economic impact. For example, the replacement of shuttle looms with pneumatic rapier looms at the Kreygol'mskaya manufaktura Cotton Combine considerably improved the working conditions, increased the labor productivity and the standards of production and made it possible to release some of the service personnel, who could be used in other sectors.

The advantages of the modernization of operating equipment are still not being adequately utilized when implementing measures on retooling. Meanwhile, as practice shows, this least capital-intensive form of reproduction of the active component of fixed capital is highly effective.

The procedure of planning capital investments in the retooling of enterprises and the methods of determining their effectiveness require further improvement. At present the result of the measures on retooling is evaluated according to the increase of production capacities. But in a number of instances this increase is absent, since the given measures cover mainly ancillary and maintenance works, warehouse and general facilities and purification plants. For these operations the ministries and departments report back on the placement of fixed capital into operation. At the same time the contracting construction and installation organizations, which are recruited to perform this work, are not devoting proper attention to it, which leads to the violation of the planned dates of installation of the equipment and the increase of its above-standard surpluses and to the protraction of the construction period.

In order to streamline the classification of the outlays on the retooling and renovation of operating enterprises and to increase the effectiveness of the capital investments for these purposes it would be proper to single out in the plan the outlays for organizational and technical measures, including in them the nonfund-forming investments and expenditures on the performance of operations which will not entail an increase of the production capacities.

A significant shortcoming of the organization of the work on retooling is the lack of uniform comprehensive planning estimates for these outlays, which does not make it possible to determine beforehand the total impact from the capital investments. It seems that this question would be eliminated to some extent in connection with the adoption of a decision on the drafting by ministries and departments of consolidated plans of the renovation and retooling of operating plants.

The importance of the measures on retooling and the priority nature of their planning and financing create the need for some revision of the prevailing practice of evaluating their effectiveness. In addition to the increase of production capacities and the placement of fixed capital into operation the operating enterprises, to which state capital investments have been allocated for the retooling of production, should also provide for the improvement of the qualitative indicators, such as the increase of labor productivity, the decrease of the production cost, the increase of product quality and others.

The specific nature of such a form of the reproduction of fixed capital as retooling presumes the possibility, and more often even the necessity of its simultaneous performance with the expansion of operating enterprises. Such an assumption has an economic basis, since the construction of new shops and production facilities within existing enterprises, as a rule, takes into account the latest achievements of scientific and technical progress, but at the same time requires that the existing shops be brought up to a modern level, especially when adopting advanced technology. However, such an economic basis is absent in the case of new construction and renovation, since these capital-intensive measures, which are significant in scale, are themselves capable of solving all the questions connected with the formation of the production apparatus without the commitment of the additional assets being allocated for retooling. In our opinion, the effectiveness of the capital investments in the retooling of operating enterprises is decreasing significantly due to the existence of outlays for the purchase of equipment, which for some reasons (without an indication of specifically which ones) has not been included in the estimates of construction projects. Meanwhile operating enterprises at times exercise the right to purchase equipment at the expense of the assets allocated for retooling, but equipment which is not intended for these purposes. Audits by the All-Union Bank for the Financing of Capital Investments have established cases when with the exhaustion of the estimated limits for the renovation or construction of enterprises instead of revising the plans and estimated cost the clients purchase equipment at the expense of other assets, which were allocated for retooling, the purchase of equipment not included in the estimates of the construction projects and capital repair. As a result, with a stable estimated cost of the objects of new construction and renovation the cost of the fixed production capital of enterprises increases without the corresponding improvement of the technical and economic indicators, the efficiency of the use of the fixed capital decreases and the output-capital ratio declines.

The assignment of the assets for the payment for equipment not included in the estimates of construction projects, in addition to the equipment, which in conformity with the prevailing procedure of drawing up planning estimates for any sector is not subject to inclusion in the estimates, to the outlays on retooling is responsible for certain shortcomings in the financing of measures on the renovation and expansion of operating enterprises.

The increase of the proportion of the assets being allocated for the payment for equipment has little in common with meeting the requirement of improving the reproductive and technological structure of capital investments, since the improvement of the structure of fixed production capital cannot be an end in itself, but presumes the corresponding improvement of other technical and economic indicators and the shortening of the construction period, which in practice is made difficult with the violation of proportionality and balancing in the technological structure of capital investments, which is envisaged by the state plan, dooming the contractor to a financial squeeze.

In this connection it seems expedient to strictly regulate the composition of the equipment included in the plans on retooling and to back it with the necessary planning estimates, which are a component of the consolidated plan of the retooling of an enterprise (association). The equipment specified by the prevailing procedure in the sector of drawing up planning estimates should be assigned to the equipment not included in the estimates of construction projects, while all other equipment should be included in the appropriate estimates for new construction, renovation or expansion. It is advisable to envisage outlays for retooling at those projects which are not affected in the process of carrying out the modernization and expansion of production according to the separately drafted plans and estimates.

The changes in the planning of capital investments and the abolition of non-centralized capital investments also caused changes in the sources of financing of the outlays on the retooling and renovation of operating enterprises. According to the adopted procedure, starting in 1977 these measures have been backed by assets of the production development fund, the fund of the enterprise and other economic stimulation funds, which are intended for production construction, and amortization deductions for renovation, but in case they are inadequate bank credits with a repayment period of up to six years from the start of the implementation of the measure are drawn.

The decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," preserves the above-indicated procedure of financing these expenditures.

According to the data of a survey conducted among the projects and construction projected being financed by the All-Union Bank for the Financing of Capital Investments, in 1977 the assets of the production development fund--in the range of 55 percent, and other internal sources--about 20 percent--first of all functioned as the financial sources for carrying out retooling and renovation, while bank credit accounted for approximately 25 percent. In 1978 the following structure of the sources of financing of the indicated measures had formed: the production development fund--56.4 percent, other internal sources--29.8 percent, long-term bank credit--13.8 percent. As we see, the proportion of the credit, which is being drawn for the retooling and renovation of operating enterprises, in the total amount of the sources of financing continues to remain negligible, while in 1978 its decrease as compared with 1977 was observed, which was caused by the commitment for these purposes of the amortization deductions for the complete replacement of the fixed capital. This led to the actual underutilization of the amounts of borrowed capital, which were envisaged by the plans. In 1977 only 64.6 percent of the credit for retooling and renovation was used, in 1978--85.7 percent, since the plan of capital investments was not fulfilled and the internal assets of the enterprises, particularly the assets of the production development fund, were used first of all when providing financing.

The further improvement of the system for financing and extending credit for capital investments should increase the effectiveness of the extension of bank credits. At present the criteria of the use of long-term loans in the financing of capital investments have been changed somewhat and the forms of the reproduction of the fixed capital: new construction, expansion, renovation and retooling, are taken into account along with the payback period.

The use of long-term bank loans for the purposes of retooling and renovation is very expedient and can yield a greater impact as compared with the extension of credit for major investment programs which involve new construction. The implementation of measures on retooling and renovation is being stimulated more completely by credit relations, since the most important principles of credit extension prompt the more rapid completion of the measures being implemented and the better utilization of the capacities being put into operation.

The potentials of the realization of the advantages of bank credit in the financial backing of capital investments in an operating works are incorporated in the close coordination of the principle of credit extension with complete cost accounting, on the basis of which operating enterprises run and which presumes a closer dependence between the effectiveness of outlays and the results of cost accounting activity. The development of the extension of bank credits for capital investments makes it possible to release a portion of the assets of the state budget by means of the transfer of a portion of the internal resources for the financing of new construction, the expansion and renovation of enterprises, which are planned to operate at a loss and have a low profitability, with a long payback period of the outlays, ensures the more complete mobilization of all the internal sources of the financing of capital investments, strengthens the contacts of the bank with investors and presumes strict monitoring of the use of investments.

At the same time it should be noted that bank credit yields the greatest impact with involvement in the financing of measures on retooling. Thus, 80 percent of the outlays for the retooling of the twisting, weaving, dyeing and trimming works at the Cherkassy Silk Combine of the Ukrainian SSR Ministry of Light Industry in the total amount of 18.8 million rubles were made through long-term credit of the All-Union Bank for the Financing of Capital Investments and the USSR State Bank. As a result of making these outlays the specific capital investments were cut in half as against new construction. The increase of labor productivity made it possible to release 55 people a shift, to ensure an additional output of products per year of more than 10 million rubles and to obtain an additional profit of 2 million rubles.

For the enterprises of the USSR Ministry of the Food Industry, which drew long-term bank credit in significant amounts, the retooling of the enterprises of the All-Union Association of the Margarine Industry made it possible to increase the output of margarine at the Donetsk Margarine Plant

by 8,000 tons a year and the output of hydrogenated vegetable fat at the Tbilisi and Kuybyshev fat combines by 8,000 tons and at the Moscow Fat Combine by 3,000 tons.

Nevertheless, as was indicated above, long-term bank credit has not become widespread in the financing of measures on retooling and renovation. This situation is connected with an entire set of factors, the main one of which is the excessiveness of the internal sources of financing and first of all the assets of the production development fund. As practice shows, the need to draw long-term credit arises primarily when the indicated outlays are redistributed in favor of the renovation of an operating enterprise. Renovation is the form of the reproduction of fixed capital, which is more capital-intensive and longer in duration, but more limited in the number of enterprises which implement it. Retooling is a more widespread and less capital-intensive set of measures on the updating of the active component of the production apparatus. The unification of the sources of the financing of the renovation and retooling of operating enterprises creates a situation in which the bulk of the enterprises carrying out retooling have production development funds in amounts which considerably exceed their real needs for assets for these purposes. Since 1978 it has been allowed to allocate the assets of the production development fund, in addition to retooling and renovation, for the financing of other operations and outlays, which are envisaged by the capital construction plan, and at the same time to commit the amortization for the complete replacement of the fixed capital. This is unjustifiedly increasing the number of redistribution processes in the formation and use of internal capital for the financing of capital investments at enterprises and in sectors.

Therefore it seems expedient when elaborating the new standards for the formation of the production development fund to proceed with the view of finding at operating enterprises a stable source for the financing of outlays on retooling, which is connected with the parameters of the reproduction and updating of the fixed capital: the growth, replacement, retirement and rate of turnover, and at the same time of ensuring the involvement of bank credit in the financial backing of these measures. The amortization fund acts as such a source at operating enterprises.

On the basis of the economic content of the measures on retooling for their financing it is expedient to draw the amortization for renovation from the active component of the fixed capital, as well as the amortization for capital repair in the part intended for modernization or the purchase of equipment.

Since the amortization for renovation is one of the sources of financing of both simple and expanded reproduction, it is therefore legitimate to ensure at operating enterprises stable and guaranteed rates of the simple reproduction of the fixed capital at the expense of internal assets.

For these purposes there should be allocated for retooling not the entire amount of amortization of the active component, but only that amount of it,

which originates from the outlays, which are stipulated in the plans of the technical development of the enterprise (association), for the modernization and replacement of retired and obsolete equipment. It is feasible to meet the remaining need for assets for capital investments by long-term bank credit. The increase of bank control over the rate and effectiveness of the expanded reproduction of the production apparatus of operating enterprises, as is required by the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," will be achieved by this.

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7807

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UTILIZATION OF RESOURCES AND SUPPLY

NEW DEVELOPMENTS IN SUPPLY ORGANIZATION HIGHLIGHTED

Material, Technical Base

Moscow MATERIAL'NO-TEKHNIЧЕСКОYE SNABZHENIYE in Russian No 2, Feb 80
pp 54-57

[Article by Candidate of Economic Sciences B. Mukhin and Candidate of Technical Sciences Yu. Gusev: "The Future of Enterprises for Deliveries of Products"]

[Text] The successful accomplishment by the statewide system of material and technical supply of the tasks on the extensive introduction of advanced forms of the supply of consumers with material resources, which were set for it by the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," to an enormous extent depends on the state and level of development of its own material and technical base and on the provision of the enterprises for deliveries of products of the system of USSR Gossnab with means for the complete mechanization and automation of loading and unloading, materials-handling and warehousing processes.

By the material and technical base of supply and sales the authors mean the totality of the means of labor, technological processes and organizational forms, which ensure the efficient receipt, allocation, storage, preliminary preparation, release and delivery of products to the place of consumption. Here there are included in the means of labor: warehouse buildings and structures, sections for the preliminary preparation of products for consumption in production, equipment, machinery, devices, vehicles, computer and organizational equipment and others.

In conformity with the decisions of the party and the government positive changes have begun to appear in the development of warehousing services. The technical policy in this matter is oriented toward increasing the level

and degree of the mechanization and automation of warehousing processes and toward bringing them up to the level of development of basic production of the sectors of the national economy.

During the years of existence of USSR Gossnab a ramified network of modern specialized and general-purpose enterprises for deliveries of products has been set up, which makes it possible to concentrate material resources in the sphere of circulation and ensures the smooth supply of the sectors of industry, construction and transportation. Crane equipment, stackers, electric loaders and truck lifts, shelves, pallets and standardized packaging, which are now being produced, are used extensively at these enterprises.

A typical feature of the development of the warehousing services of the system of USSR Gossnab in recent years has been the completion of the construction and the placement into operation of large general-purpose mechanized warehouse complexes (18 such facilities are already in operation at territorial supply organs). But the long construction periods (in a number of cases up to 11 years) adversely affected the assimilation of the planned capacities, since during that period significant changes occurred in the volumes and structure of the commodity production being processed, some types of equipment became obsolete and were inefficient. This required the elaboration by the forces of planning organizations and the introduction at the complexes of additional technological, economic and organizational decisions, as well as the replacement of some types of equipment. Thus, of the total planned capacity of 2.44 million tons of freight turnover a year of the warehouse complexes put completely into operation, on 1 January 1979 1.92 million tons, or 78.9 percent, had been assimilated. The planned capacities of the warehouse complexes had not been assimilated at the administrations of material and technical supply of Moscow City, Leningrad, the Lower Volga, Volga, Oka, East Siberian, Krasnoyarsk and Irkutsk regions, as well as at Gossnab of the Ukrainian and Belorussian SSR's.

In implementing the comprehensive approach to the further development of the warehousing services of the country, USSR Gossnab approved the program of operations for 1976-1980. In conformity with this program advanced technological processes of warehousing operations were developed for the basic types of products, including ferrous and nonferrous metals, lumber, individually packaged cargoes, construction materials, chemical products and others, the pilot industrial introduction of which is being carried out at 150 enterprises of industry, transportation and supply.

The elaboration of technological planning decisions is being carried out by a large group of scientific research and planning and design organizations of various ministries and departments, which are being coordinated by the Organab Institute of USSR Gossnab. The adoption of this program is not by chance. It was brought about by the fact that the development of an improved technological process of warehouse freight handling, which is based on the extensive use of highly productive materials-handling equipment and other machinery, is the determining factor of the further improvement and development of the material and technical base of supply and

sales. The conditions, which ensure the complete mechanization and automation of materials-handling, loading and unloading and warehousing operations, the safety of freight and the minimum cost of freight handling, are becoming the criteria of the choice of a technological process. It is necessary to cover by a unified uninterrupted chain all the means of mechanization, linking their operation with the processing method of all the flows of freight.

Analysis shows that only complete mechanization and automation are capable of sharply increasing labor productivity. The experience of the Organab Institute in developing advanced technological processes and means of mechanization for 26 large general-purpose warehouse complexes, the majority of which have already been put into operation, is of interest in this respect. On the basis of the analysis of the nomenclature of the freight stored at the complexes, according to its weight and dimensional characteristics, as well as according to the batching nature of the arrivals and shipments technological processes were developed, which include all of the operations necessary for the handling of the freight, and the operations of the receiving, the making up of batches, manual sorting, temporary storage, subsorting, packaging and so on were distinguished. In addition to the crane-stackers, electric loaders and warehouse packaging, which were envisaged in the plan, the institute proposed a set of equipment, which ensures the maximum elimination of manual labor in all freight handling operations.

Shelves of the platform type, traveling automated and elevator stackers, specialized sections with a set of equipment and packaging for the manual sorting of freight, automated sections of the warehouse with a KShM-1,0-7,2 and KShMS-100-6,0 crane-stacker, mechanized lines for making up batches of individually packaged products using an intershelf lift and others, in particular, should be grouped with these new advanced technical decisions.

The introduction of advanced technical decisions at 26 general-purpose warehouse complexes, according to the estimates of the Organab Institute, is making it possible to increase their capacity by 50,000 tons, which is equivalent to the placement into operation of five additional large general-purpose warehouse complexes, and to reduce the need for the number of service personnel by approximately 1,400 people.

According to the estimates of the State Scientific Research Institute of Machine Sciences imeni A. A. Blagonravov, the further considerable increase of the volumes and proportion of the warehouse supply of consumers would be economically justified. For example, during the period of 1981-1985 it is feasible to increase this volume 1.7-fold, with the view of increasing the proportion of warehouse supply to 27.7 percent in 1985 as against the 21 percent anticipated in 1980. This would make it possible to release in five years from the production stocks in industry commodity stocks worth 6.9 billion rubles.

During the 11th Five-Year Plan the need will arise for the further improvement of the technological processes of loading and unloading,

materials-handling and warehousing operations from the point of view of the introduction of automated equipment, automated control systems of technological processes and the development of new completely mechanized and automated warehouse systems.

Some experience in automating individual warehousing operations has already been gained by the Proyehtin Institute, the SKBS, the Leningrad Department of the PromtransNIIProyekt, the Kiev Snaabproyeht, the Gor'kiy Orgsnab and others. The main direction of their work is the assurance of the automation of freight handling in the storage area, for which the crane-stackers are being equipped with an automatic control device. At the same time the institutes in practice have not elaborated the problems of automation in the sections of the receiving, the making up of batches, the temporary storage and the shipment of freight and in the unloading area of vehicles. The solution of these problems is a vital task facing the specialists of the institutes.

We would especially like to emphasize the idea that since the determining factor of the improvement of the material and technical base of supply and sales is the use of advanced technology, precisely it should also determine the subsequent directions of the designing and construction of warehouse facilities. The plans are called upon to take into account the precise analysis of the nomenclature of the products being stored, their suppliers and consumers. When designing warehouse facilities and selecting the warehouse equipment the difficulty consists in the detailed elaboration of the nomenclature, the volumes of the shipment of products in packages and the volumes of shipment, when the batches being shipped have to be gathered from many storage places. Many planning organizations when designing warehouse facilities continue to take as a basis the products being handled in consolidated nomenclatural groups and moreover do not take into account the composition of the consumers. As a result, a "consolidated" technological process is appearing, which requires the additional, as it is customary to call it, "distribution of products," and in essence the development of a new technological process for the real conditions, the replacement and supplementing of a portion of the equipment, which, to be sure, costs a considerable amount. An example is the already mentioned 26 large general-purpose warehouse complexes, at which the technology was refined in the process of assimilating the planned capacities. This question assumes fundamental importance in connection with the need in the next few years to draft the plans of enterprises for deliveries of products, at which the automated control of warehouse technological processes will be carried out.

One of the most important factors of the automation of technological processes is the introduction of the packaging of products along the entire route of the freight from the suppliers to the consumers. It is well known that in recent years warehouses with a high degree of mechanization in the area of shelf storage have appeared at many sectorial enterprises and in the system of material and technical supply. As to the batching, sorting and package-making operations, difficult manual labor predominates here. In many respects the delivery and shipment of freight in unpackaged form--"in

bulk"--and the lack of a wide assortment of the appropriate nonstandard equipment act as a restrictive factor of the complete mechanization and automation of operations in these sectors.

The transportation of freight in packages along its entire route from the supplier to the consumer is necessary for the simplification of the technological processes of warehouse freight handling and the possibility of their complete mechanization and maximum automation according to a extensive list of the product mix. The program of the development of advanced technological processes of materials-handling and warehousing operations in industry, construction, transportation and supply is pursuing precisely the solution of this problem.

Along with the development of the planning documents for technological processes it is also necessary to implement an entire set of additional measures. In particular, it is necessary to organize the introduction of the technological processes of packaging finished products at the supply enterprises, to ensure the revision of the standards for products with allowance made for the demands of their packaging, to prepare proposals on the legislative prohibition of the acceptance of products for shipment in unpackaged forms, to solve the question of recovering the expenditures connected with the packaging of products, as well as to draft and approve in accordance with established procedure other enforceable enactments on the organizational, economic, legal, material and technical backing of the production and circulation of the means of packaging products in the national economy.

The further development of services of a production nature on the orders of customers, as well as on the performance of the interregional warehouse sorting of products is of great importance in increasing the effectiveness and improving the quality of warehouse supply. However, the scale and level of these operations for the present still lag behind the current requirements of production. In particular, the need is arising for the construction of an extensive network of specialized shops for the preparation of ferrous and nonferrous metals, chemical, paper and cable products for consumption in production. The preparation of products for consumption in production is a comparatively new type of activity for the system of material and technical supply, which belongs to the sphere of production. The development of these operations will require the provision of the material base of supply and sales with the appropriate types of machine tool, forge and press, straightening and other equipment, which, to be sure, will lead to significant changes in the material and physical structure of the fixed capital of the enterprises and organizations of the system of USSR Gosnab.

In our opinion, in the future the composition of the enterprises for deliveries of products should include: warehouse facilities for the release mainly of products in packages or by a packaging place, which will create an opportunity to introduce an automated control system of technological processes (this is a new type of the most mechanized warehouse facility); stores of wholesale trade for the release of products to customers in small batches; a modern large specialized shop (or several shops) for the

preparation of products for consumption in production; an equipment rental center. In essence they will be consumer service centers. As needed they will also perform functions on the sorting and interregional delivery of products. Such "service centers" can be set up both at the base of operating enterprises for deliveries of products and by new construction.

The practice of developing and improving the warehousing services in the system of USSR Gossnab has shown that the use of standard and reusable plans promotes an increase of the technical level of the enterprises for deliveries of products, the quality of their construction, the shortening of the periods of designing and placement into operation and the reduction of operating costs. Their advantage is especially appreciable with large amounts of capital construction. A large group of enterprises has already been built according to such plans.

This question also does not lose its urgency for the period of the 11th Five-Year Plan. The analysis of the plan of the development and location of the enterprises for deliveries of products of the system of USSR Gossnab for 1981-1985, which was drawn up by the Orgsnab Institute, shows that it is expedient to allocate more than half of the capital investments for the expansion, renovation and retooling of operating enterprises for the purpose of eliminating the shortage of warehouse capacities for the handling of various types of products. Under these conditions it seems possible to use the principle of the formulation of planning documents for warehouse facilities from the set of drafted plans of individual buildings and structures, among which are industrial products warehouses with a capacity of 1,000, 2,000, 3,000, 4,000 and 6,000 tons (for the handling of individually packaged freight), warehouses for packaged chemical products with a capacity of 1,000-2,000 tons (for the handling of paints and varnishes, carbide, calcium, sulfonated coal, toxic chemicals and others), warehouses for construction materials and equipment with a capacity of 4,000-6,000 tons, warehouses for nonferrous metals with a capacity of 3,500, 5,000, 7,000 and 10,000 tons, open warehouses for cable products on reels with a capacity of 1,000-1,500 tons.

If needed the planning documents for the construction of new enterprises for deliveries of products can be formulated from the indicated plans, as well as the previously drafted standard and reusable plans. For this USSR Gossnab has drawn up the appropriate recommendations with the diagrams of the general plans of the yards of enterprises of different capacities and compositions. For all the types of enterprises for deliveries of products the institute has also developed systems of engineering support, auxiliary buildings and structures, general and administrative facilities. The necessary level of mechanization is provided by modern domestic technological equipment. The proposed planning decisions, according to the estimates of Giprosnab, make it possible to increase labor productivity by 10-15 percent, to reduce the cost of handling freight by 4-5 percent and to increase the effectiveness of capital investments significantly.

The use of the stated principles when performing work on the further development and improvement of the material and technical base of supply and sales will be conducive to the fulfillment of the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality."

The new approach to the development of the material and technical base of supply and sales requires the series production of modern advanced systems of machinery and equipment, which are being developed and produced by the machine building ministries. But the whole point is that the situation in this area is far from good. A number of assignments on the production of the main types of machinery and equipment for warehouses and their series production have not been fulfilled. For example, the production volumes of some types of crane-stackers and spare parts for electric loaders, which were planned by the Ministry of Heavy and Transport Machine Building for three years of the 10th Five-Year Plan, were essentially not fulfilled. This ministry has not assimilated the series production of overhead crane-stackers for sheet and long loads with a lifting capacity of 8 tons.

In short, the rate of technical progress in warehousing services to a considerable extent is being checked by the lag of the development of machine building behind the needs of the national economy. In indicating this, Comrade L. I. Brezhnev at the November (1978) CPSU Central Committee Plenum noted that the party, foreseeing a slowing of the growth of manpower resources in the 1980's, set in good time the task of creating a machine building base for the significant reduction of unproductive manual labor. A program of the accelerated development of the production of the appropriate equipment, which was intended for eight years, was adopted back in 1973. How is it being fulfilled? If we take, for example, materials-handling equipment, not one of the new plants stipulated by the programs has yet been put into operation.

The planning and design organizations of USSR Gosnab and other ministries and departments on the basis of the evaluation of the technical level of series-produced domestic materials-handling equipment have drawn up plans of the assignments for the machine building ministries on the development and assimilation of the series production of new types of highly productive equipment. In conformity with these assignments systems of machinery and equipment for the mechanization and automation of loading, unloading and warehousing operations, including operations in an automated mode, special equipment for the shipment of freight in containers and packages, automated lines for the packaging of products and package-making machines have to be developed.

When developing this equipment the evaluation of their technical level should not overshadow the social aspect of the matter. The means of mechanization are called upon to be not only heavy-duty and highly productive, but also socially acceptable (the ease of handling, the low fatigue rate of the worker, the absence of noise, vibration, harmful exhaust, a certain

degree of comfort and so on). It is very important to make the labor of the worker more attractive and thereby to promote a reduction of the personnel turnover. The social impact, the scale of which is difficult to estimate quantitatively, in the process of the further development of the scientific and technical revolution is becoming more and more significant.

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Planning, Organization of Supply

Moscow EKONOMICHESKIYE NAUKI in Russian No 3, Mar 80 pp 99-104

[Article by Doctor of Economic Sciences V. Yefimov: "What Is New in the Organization of Material and Technical Supply"]

[Text] The increase of labor productivity, the improvement of the use of productive capital, the assurance of the smoothness of operation of the entire national economic complex, in other words, the gradual increase of production efficiency to a considerable extent depend on material and technical supply. In the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," an important place is assigned to measures on the improvement of the sphere of circulation of the means of production. And this is natural, since it reflects in detail the nature of the process of socialist expanded reproduction, which presumes the close planned connection of production and consumption.

Improvement of the Planning of Material and Technical Supply

Guided by Lenin's teachings on the planned organization of the socialist economy and applying it creatively to the present conditions of the development of socialism, our party at its 25th congress and in the decisions of the subsequent plena of its Central Committee specified the main directions of the development of the statewide system of material and technical supply. The main thing in the improvement of the system in question is that a policy has been adopted of enhancing the role and increasing the responsibility of supply organs in the development of efficient economic contacts and the assurance of the smooth, efficient operation of enterprises and an increase of the efficiency of the use of material resources in the national economy.¹ The party measures, which are aimed at the further development of the statewide system of material and technical supply, are based on the fact that concentration and centralization of the latter, which are being carried out on a planned basis, are making it possible to decrease the losses in the

1. See "Materialy XXV s'yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, 1976, p 173.

national economy significantly, to reduce production costs, to increase labor productivity in the sphere of circulation and to ensure in the end the mobilization of major reserves for the increase of the efficiency of social production and the improvement of work quality.

For a long time the section of material and technical supply was absent in the five-year and long-range national economic plans. This situation originated from the fact that the planned management of socialist production in itself already ensures the planned accomplishment of the circulation governed by production. Only annual supply plans, which were regarded, in essence, merely as the form of the distribution of resources, were compiled. This approach, however, did not promote the reflection in the plans of the complex process of the expanded reproduction of the entire resource potential and, in essence, ignored the special and, in a certain sense, independent (although, of course, in the framework of the unquestionable dependence of circulation on production) importance of the question of the sources of material resources and, consequently, of the increase of the effectiveness of the consumption of raw materials, materials, fuel, energy and components. A discrepancy arose between the customary practice of distributing resources and the possibilities of the national economy in the further increase of the amounts of these resources. This discrepancy was aggravated by the fact that the saving of material resources, as one of the most important sources of their satisfaction of the needs of the national economy, was not properly linked with the system of material and technical supply of sectors. Meanwhile the planned production of products and the use of materials resources are, in essence, a unified process which forms the basis of social expanded reproduction.

The examination of the questions of improving material and technical supply presumes the need for at least a brief description of it. The system of material and technical supply includes the following basic components: the distribution of material resources; their concentration in the necessary amounts in the sphere of circulation for the assurance of the continuity of production; the planned circulation of material resources as commodities in the most efficient forms (direct long-term economic ties, the supply of customers in conformity with the ordered amounts and mix of products, the rental of scarce types of equipment and instruments and so on); the improvement of the consumer qualities of material resources in the sphere of circulation in conformity with the orders of the consuming enterprises (the cutting up, cutting and cutting out of materials, the application of the appropriate coatings and so on); the the backing of operations on the use of secondary raw materials (the collection, procurement, treatment and processing of secondary metals, waste paper, glass and so on).

From the description of the set of components of the system of material and technical supply it is clear that complicated and important functions, for the performance of which it needs a certain material base, are characteristic of this sector. The organization of material and technical supply, which meets present requirements, presumes the planned creation and the use of the necessary amount of warehouse capacities, the existence of an

economical and advanced packaging service and industrial enterprises, which ensure the complete recovery of production and household waste products.

The efficient accomplishment of material and technical supply requires the integral combination of the current plans of deliveries with the five-year plans and the plans for the more distant future. This problem was basically resolved in the decree "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," which was adopted by the CPSU Central Committee and the USSR Council of Ministers on 12 July 1979. The decree stipulates that all associations (enterprises) and organizations, guided by the control figures for the main indicators and economic standards for the five-year plan, are obliged jointly with sales organizations to perform preliminary work on the specification of the products list (assortment) for the conclusion of long-term economic contracts. It was established that for the five-year plan along with the balances of production capacities, manpower and financial resources, monetary income and expenditures of the population material balances are elaborated, in which the appropriate reserves of material resources for the needs of production, capital construction and scientific research work and, in necessary instances, reserves of production capacities are outlined. The development of five-year material balances is a new important step in the planned organization of stable material and technical supply.

The balance sheet method of planning is the basis for maintaining conformity to the plan. The party is proceeding on the basis that the plans of industrial production and construction work should be balanced. When speaking about the balance of plans, we have in mind not simply an arithmetical equality of the results of the resource and distributional parts of the balance sheet. It is a matter first of all of the conformity of the resources being allocated to the needs of production also from the point of view of the quality of the assortment, as well as the delivery dates. Is it possible to consider the production of products balanced, if the need for them should be met in January and February, while the supplier ships them only in March? The nonconformity of the real needs and the real delivery dates of material resources is one of the most widespread causes of the actual imbalance of the national economic plans. Such a situation arose owing to the fact that the material balances are limited only to a year-long period. Meanwhile the list of centrally distributed products consists of nearly 55,000 items (it should be taken into account that this figure includes grouped types of products). The specific consumer needs specificity of the item, that is, the latter should conform precisely to his real needs. Therefore, the balance of the production and distribution of the most important types of products depends in the end on how the needs precisely for a specific product are coordinated with the balance sheets.

USSR Gosnab is drawing up 13,200 material balances and plans of distribution, and 10,700 balances are being drawn up and approved by the Gosnabs of the union republics and by territorial administrations of material and technical supply. The work on compiling material balances presumes the

determination of the needs of the national economy for specific material resources. The determination of these needs is one of the most responsible items in all this work. Many cases are known, when enterprises, ministries and departments overstate the needs for material resources. This overstatement, regardless of its specific reasons, does enormous harm, since it makes it incumbent to create excess capacities. Hence the exceptional importance of the work, which the statewide system of material and technical supply is performing on the more accurate determination of the needs for specific types of material resources.

The main administrations of material and technical supply of USSR Gosnab have organized engineering subdivisions, which provide the appropriate conclusions for the estimates of needs, which are made by ministries and departments. Thus, in the practical work of Soyuzglavpodshipnik the adjustment of the needs, which were calculated by enterprises, departments and ministries, amounts to a significant amount: 30-50 percent and more. Soyuzglavelektroapparat, having organized an expert appraisal of the need announced for 1976-1978 of the enterprises, organizations, ministries and departments for low-voltage equipment, issued a conclusion on the inexpediency of the use of this scarce equipment in the total amount of 44 million rubles. As a result, the needs declared in the plans were completely met, while the electrical equipment industry rid itself of the need to produce unnecessary low-voltage equipment. The interdepartmental commission for the saving and rational use of stainless steels and nonferrous metals attached to USSR Gosnab for a number of years performed work on the engineering and technical analysis of the use of the indicated materials in the production of new equipment, which made it possible to reduce the use of scarce types of raw materials by many tens of thousands of tons.

The drawing up of material balances is also important because it makes it possible to determine the bottlenecks in the national economy. Here USSR Gosnab is obliged jointly with the appropriate ministries and departments to elaborate proposals on the elimination of these bottlenecks, submitting the necessary calculations and substantiations. The compilation of territorial balances by USSR Gosnab jointly with the ministries and departments, as well as with the councils of ministers of the union republics, and the carrying out of the distribution of the most important types of products, which were specified by the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, are a new important feature in the improvement of the direction of planning activity in question in this area. Such elaborations serve as the basis for the determination by the transportation ministries of the configurations of the optimum freight flows for mass cargoes.

The compilation of material balances rests on the appropriate standard base of the expenditures of raw materials and materials and the formation of physical reserves (stocks) in the national economy. USSR Gosplan is the methodological center, which coordinates all the work in the country on the formulation of the rates of consumption of material resources. In conformity with the methods of USSR Gosplan the enterprises and associations

elaborate specific rates of consumption of material resources. In connection with the need to draw up five-year material balances the determination of the rates of consumption of material resources for this period is required.

The standards of reserves of material resources, which have been approved by USSR Gosnab, are assuming particular urgency. The 25th CPSU Congress issued the directive: to speed up the turnover rate of working capital during the 10th Five-Year Plan by 3-5 days.² In this connection the improvement of statistical reporting, in particular, is very important. At present material stocks are formed in conformity with the Temporary Method of Determining the Standards and Production Stocks of Raw Materials and Materials and the Model Method of Standardizing Commodity Stocks at the Bases and Warehouses of the Supply and Sales Organizations of USSR Gosnab. Here the efforts are not being focused on the control of the total stocks, which include production and commodity stocks and unfinished production. Meanwhile, under present conditions the need to develop a method, which makes it possible to control the total reserves of material resources, seems unquestionable.

The total amount of material resources, which are in the reserves of commodity stocks, is quite large: in monetary terms it was 107.7 billion rubles in 1965, 163.4 billion rubles in 1970, 234.3 billion rubles in 1975 and 286.2 billion rubles in 1978. In other words, during 1965-1978 the working capital in material stocks increased 2.7-fold. The amount of unfinished construction increased 3.3-fold--from 29.6 billion rubles to 99 billion rubles. These figures attest quite convincingly to the great urgency for the elaboration of standards of the stocks of material resources, which would regulated not only the movement of physical assets in the sphere of circulation, but also the amounts of unfinished production.

The assignments on the saving of the most important types of material resources are specified in the section of the five-year plan on material and technical supply. The assignment on the saving of the most important types of material resources is established on the basis of the consideration of a wide range of factors (the use of new materials, light-weight components, more efficient technological processes and so on). Scientific and technical progress is responsible for the possibility of gradually reducing the specific expenditures of material resources. Thus, in the early 1950's 21,000 kWh of electric power were consumed in industry for the production of a ton of aluminum, while in the 1970's 14,700 kWh were consumed. In 1977 the specific consumption of rolled metal for the production of box cars (on sliding bearings) according to the standard was 2.1 percent less than in 1970. The rate of consumption on the production of wide-gauge 6VS-60 (braking) dumpcars during 1970-1977 decreased by 2,419 kg, while the actual consumption decreased correspondingly by 2,839 kg. Whereas in

2. See "Materialy XXV s"yezda KPSS," p 169.

1970 the consumption standards for rolled metal were not fulfilled and the actual consumption exceeded the standard by 0.8 percent, in 1977, on the contrary, the actual consumption of rolled metal was 1.1 percent less than the standard.

The management of the policy of economy presumes the need for the planned regulation of the materials-output ratio of items and the utilization ratios of metal and other materials. At present a method of forecasting and planning the materials-output ratio has been elaborated, its experimental approval has been carried out and starting with the 11th Five-Year Plan it will be possible to use this method at enterprises and associations. At the same time the need for the further improvement of the methods of standardization should be taken into account. It seems to us that losses should not be included in the consumption standard, since this does not stimulate enterprises to adopt no-waste technology. The inclusion, in particular, in the consumption standards of only the weight of the materials, which are included in the finished rolled products, makes it possible to regulate in a planned manner the process of reducing the losses of material resources in production, during storage and transportation.

The monitoring of the fulfillment by enterprises and associations, ministries and departments of the set assignments on the average reduction of the rates of consumption of material resources is assuming particular urgency. This monitoring is being carried out by the State Inspectorate for the Surveillance of the Use of Material Reserves attached to USSR Gosplan. This inspectorate annually audits more than 10,000 enterprises and associations. During the audit attention is directed first of all to the dates of the reporting by the ministries and departments of the assignments on the reduction of the rates of consumption of materials, and the conformity of the drafted plans of organizational and technical measures on the reduction of the rates to the assignments which are set by the state plan is determined. The directions of the use of material resources are also identified: did they conform to what was stipulated by the plan assignments. In order to check the use of material resources at enterprises and associations the inspectorate enlists specialists, scientists and representatives of public organizations. The compiled audit document is sent to the territorial administration of material and technical supply of USSR Gosplan, which serves the given enterprise, as well as to the ministry, to which the enterprise being audited is subordinate. Not only individual enterprises, but also entire sectors are subject to such audits. The results of the audits are reviewed in the collegia of the appropriate ministries and USSR Gosplan, which in accordance with established procedure brings them to the notice of the USSR Council of Ministers. The ministries and departments are obliged to take the necessary steps which ensure the elimination of the noted shortcomings in the use of material resources. The activity of the monitoring organs of the system of USSR Gosplan is integrally connected with the work of the organs of the People's Control and the departmental monitoring organs. As a result of the synthetic monitoring of the use of material resources, as was already noted, a certain improvement of their use in a number of sectors of the national economy is being achieved.

Advanced Forms of the Supply of Industry and Their Development

In the process of material and technical supply those of its forms, which make it possible to organize the intersectorial turnover of physical assets for production and technical purposes with the least inputs of labor and capital, are especially important. The development of specific forms of the trade in the means of production is a component of economic progress. The need to expand the use of advanced forms of material and technical supply in conformity with the directives of the 25th party congress is emphasized in the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979.

The main direction in the organization of efficient economic ties consists in developing a system of effective interaction between major producers and consumers and in providing the most favorable conditions for the material and technical supply of small consumers. In this connection the completion of the changeover of associations (enterprises) to direct long-term economic ties, the conclusion of economic contracts for the delivery of products with a term of not less than five years, the enhancement of the role of supply organs in backing the deliveries with economical types of products and the further enlargement of the sphere of activity of the enterprises and organizations of material and technical supply on the development of services are assuming particular urgency.

The set of indicated measures is creating the necessary conditions for the steady supply of associations (enterprises), that is, is creating an important factor of the assurance of smooth operation. In the country considerable experience has been gained, which shows that the strict observance of the contracts for the delivery of products in the complete amount and assortment and on the set dates in conformity with the supply schedule makes it possible to improve the use of manpower resources and fixed production capital.

In the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 USSR Gosnab jointly with the interested USSR ministries and departments and the councils of ministers of the union republics is obliged to complete mainly in 1980 the changeover of production associations (enterprises) to direct long-term economic contacts. This is an enormous job, if we bear in mind that in the national economy by early 1979 there were 43,767 production and scientific associations, combines and enterprises, which were carried on an independent balance sheet, including 3,857 associations which include 17,122 independent industrial enterprises.

The industrial production volume is increasing annually by several tens of billions of rubles, the amounts of material resources consumed by industry are increasing correspondingly. In 1965 the volume of consumption of material resources in industry was 156 billion rubles, in 1970--245.2 billion rubles, in 1975--339.8 billion rubles, in 1978--382.4 billion rubles. In other words, in 13 years the consumption of material resources in industry increased nearly 2.5 fold. With allowance made for the measures on the

saving of material resources and the reduction of the materials-output ratio in the years ahead the growth rate of the consumption of material resources in industry will decrease somewhat. Nevertheless its volume remains very significant and has a certain tendency to increase in connection with the steady growth of industrial production. Therefore, direct long-term economic ties will henceforth encompass wholesale trade in material resources worth hundreds of billions of rubles. The economic advantage of this form of ties is that they ensure an increase of the level of the conformity to the plan of the management of material and technical supply and its effectiveness. Here the economic ties necessarily presume the development of the initiative of enterprises, since in the process of implementing these ties the producers and consumers of the given product refine its list and make rational changes in its assortment and determine the most effective delivery dates.

The decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 established that in the case of direct long-term economic ties the contracts between the associations (enterprises) of industry, as well as between these enterprises (associations) and the organs of USSR Gosnab, transportation organizations and the organizations of state and cooperative trade are concluded for a five-year period. The conditions for changing the assortment which was agreed on are also specified. Here the volume of the deliveries of products according to the contracts for the five-year period is established with a breakdown by years and, as a rule, in accordance with a grouped list (assortment). When compiling the annual plans the list of products being delivered is given in detail and made more precise no later than 4-5 days before the start of the year. Some differences between the suppliers and the consumers may, of course, arise when concluding contracts. However, at present the supplier does not have the right to refuse to conclude a contract, if direct long-term economic ties exist between him and the consumer and the order of the consumer ensues from the approved state plan.

The statewide system of material and technical supply is based, in particular, on that most important advantage of it that it is guided in its activity not by departmental, but by national economic interests. This especially tells on the assurance of the deliveries to the national economy of new types of materials and new equipment. The all-union administrations for sales attached to USSR Gosnab are performing much work in this direction. Thus, Soyuzglavstankoinstrument in close creative cooperation with the Scientific Research Institute of Superhard Materials (Kiev) has carried out much work on the introduction of tools based on synthetic diamonds. USSR Gosnab has held a number of conferences of the executives of diamond tool manufacturing enterprises and consumers with the demonstration of new types of tools and the subsequent determination of the need for them for specific enterprises and associations. Soyuzglavkabel' is performing a large amount of work on the use of efficient types of cable items. Another example: as a result of the analysis of the products being produced and the use of the developments of scientific research organizations Soyuzglavkabel' recommended

the more extensive use of cables of smaller gauges, which was responsible for an increase of the quality of the products being produced and a saving of nonferrous metals.

The all-union main administrations for the supply of complete sets of equipment, which have been set up in USSR Gosnab, are playing an important role in assuring the deliveries of advanced equipment. They are the fund holders for equipment, instruments and other items, with which construction projects are supplied in sets. The role of USSR Gosnab in the solution of problems of meeting the needs of scientific research and experimental design organizations is great. Although the proportion of these organizations in the total consumption volume is small, USSR Gosnab, guided by the statewide goals of scientific and technical progress, attaches especially great importance to meeting their needs.

The formation of the various specialized services of material and technical supply took place as the material base of USSR Gosnab was strengthened. Now the sphere of their activity is being expanded. In particular, such a form of the supply of production associations and organizations with material resources as the guaranteed complete supply on the basis of contracts concluded by them with the organs of USSR Gosnab emerged as a result of the cooperation of the organs of material and technical supply of the Leningrad Administration of Material and Technical Supply and industrial enterprises. The decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 provides for the development of this form of supply. The enterprises transfer their staffs of the supply services, the warehouse facilities, as well as the assets for the further development of the warehouse facilities to the administration of material and technical supply, which concludes the appropriate contract for serving the enterprises. As a result the executives of the enterprises have the opportunity to concentrate their efforts on the solution first of all of technical and technological problems of production. In accordance with the orders of the enterprises the supply organs deliver raw materials and materials according to the schedule which was agreed on directly to the place of consumption.

An important sphere of activity of supply organs is the centralized delivery of products to the consumer from the supply and sales bases of the territorial organs of USSR Gosnab according to the schedules which were agreed on by common carrier, and if necessary by the transport of USSR Gosnab. In the decree of the CPSU Central Committee and the USSR Council of Ministers USSR Gosnab is ordered to complete during the 10th Five-Year Plan the changeover to this form of the transport service of consumers. It is difficult to overestimate the importance of these measures, since the extensive dissemination of the system of the "self-hauling" of products entails losses of working time, creates an additional need for motor transport and leads to the need to have much additional manpower for loading and unloading operations.

The provision of production services to consumers is an especially important direction in the activity of the organs of material and technical

supply and the enterprises of USSR Gossnab. In late 1979 the USSR Council of Ministers adopted a decision on the rendering of services to consumers by the enterprises of USSR Gossnab. It was calculated that each ruble of expenditures in the sphere of such services yields an economic impact of up to 5 rubles.

The Comprehensive Supply of Construction. The Development of Cost Accounting Relations in the System of Material and Technical Supply

As scientific and technical progress picks up speed, the role of capital investments increases. The amounts of investments are constantly increasing. During the last year of the 10th Five-Year Plan just as much capital is being invested in the national economy as was invested during the years of the Fourth and Fifth Five-Year Plans taken together. The analysis of the investment process shows that its effectiveness depends to a significant extent on the system of material and technical supply.

In recent years in connection with the construction of enormous industrial territorial complexes the role and responsibility of the territorial organs of USSR Gossnab in supplying them with everything necessary have increased. An experiment on the comprehensive supply by organs of material and technical supply of construction projects and facilities under renovation (in conformity with the orders in accordance with the estimates), which was conducted in a number of regions (the Belorussian SSR, Murmanskaya Oblast and elsewhere), showed the progressive nature of this form of supply. The CPSU Central Committee and the USSR Council of Ministers in the decree adopted on 12 July 1979 obliged USSR Gossnab to complete in 1981 the change-over of the construction projects, which are included in the state plan of capital construction, to the comprehensive supply of materials through the territorial organs of material and technical supply in accordance with the orders of construction and installation organizations in conformity with their need, which is specified by the plans and estimates. At the same time USSR Gosplan and USSR Gossnab are ordered to provide in the plans for the allocation to the ministries, departments and councils of ministers of the union republics for construction projects, which are being performed by using their own resources, of material resources in accordance with the standards approved in the corresponding sectors, as well as the necessary construction machinery and vehicles. This should substantially improve the entire arrangement of the matter of supplying construction organizations, since the territorial organs of USSR Gossnab, being in the immediate vicinity of the construction projects, can solve specifically and efficiently on the local level questions of material and technical supply, freeing the construction organizations from the need to engage in functions not characteristic of them.

The increase of the technical level of production, the development of new production capacities and the renovation of operating capacities require deliveries of complicated equipment. Experience shows that the making of these deliveries "in bulk" leads to a considerable delay of the placement of the corresponding productive capital into operation. Therefore the

decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 envisaged the expansion of the delivery in complete sets of technological equipment, production lines, assemblies and means of mechanization, automation, control and monitoring.

In this decree provision is also made for the development of cost accounting and the intensification of the role of economic levers and stimuli in the system of material and technical supply. The prevailing system of material and technical supply utilizes the elements of cost accounting in the work of the all-union main administrations of supply and sales and the all-union main administrations of the supply of complete sets of equipment. In the future it is necessary to do much in this area; the main direction of the development of cost accounting consists in the improvement of the system of contractual relations between the organs of material and technical supply and the enterprises being served. The improvement of the system of price markups for products, which are sold to customers by way of wholesale trade through the warehouses and bases of the enterprises of USSR Gossnab, is also of considerable importance.

The selection of the criterion of the evaluation of the work of supply organs is acquiring an important place in the development of cost accounting. The indicator of the wholesale commodity turnover, which was in effect for a long time, did not promote an increase of the quality of this work. The difficulty in choosing a criterion of the evaluation of the activity of supply and sales organizations is that these enterprises by their nature are intermediaries and the effectiveness of their operation is connected with the effectiveness of the operation of the enterprises being served. At present a search is being made for a criterion of the evaluation of the activity of the organs and enterprises of supply. There are several variants of this evaluation. The indicator of the fulfillment of delivery contracts by the enterprises, which are included in the service area of the territorial organs of material and technical supply, is the most prevalent innovation in the evaluation of the activity of supply organs. It seems to us that it is also expedient to introduce correction factors which are connected with the fulfillment of the assignments on the output of products with the Seal of Quality, as well as the assignments on the saving of material resources and the increase of the output of products by means of the commitment to circulation of unused resources, secondary raw materials and so on.

A cardinal issue, which shapes the system of the new economic mechanism, is the question of the responsibility for the fulfillment of the obligations on deliveries with allowance made for orders and contracts. This situation is of fundamental importance, for the specific ties between production and consumption are accomplished first of all owing to the fulfillment of the plans of deliveries in strict conformity with the assortment which is specified by the plan.

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REGIONAL DEVELOPMENT

ARTICLE ON TERRITORIAL-PRODUCTION COMPLEXES REVIEWED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 3, Mar 80 pp 98-99

[Article by N. Raman, Chairman of Gosplan of the Latvian SSR: "The Problems of Territorial-Production Complexes"; For related article see JPRS 74467 dated 29 Oct 79, No 895 of this series, pp 19-27]

[Text] An article by V. Savel'yev and B. Shtul'berg, "On the Methodological Problems of Planning Territorial-Production Complexes," was published in the magazine PLANOVOYE KHOZYAYSTVO (No. 9, 1979). In it there are quite a few valuable proposals among which one would like to single out the question of the composition of the territorial-production complex (TPC) and network schedules as the basis for making up invariable title lists. A procedure for planning the TPC is also proposed by the authors.

It follows from the second and third sections of the article that on the basis of a long-term program for the creation of the TPC a general plan is made up which serves as the basic material for working out the basic directions. The latter are the basis for the formation for the five-year and annual plans for the development of a TPC which are singled out in special sections of the plan for the economic and social development of the country. Further on in the article control figures for the development of the TPC are cited with assignments distributed for the ministries and departments which approve the draft plans of enterprises. Then, a draft summary plan for the development of the TPC is described, from which there follows an approved draft summary plan which, finally, is approved within the state plan for the economic and social development of the USSR.

It seems to us that the authors have excessively complicated the procedure for planning the TPC and have introduced many obscurities. As an alternative, the following scheme for planning the TPC is proposed. When the overall program for scientific and technological progress for twenty years is developed all of the questions connected with creating new and developing existing TPC are worked through and the corresponding proposals are made. These proposals are refined and detailed in the basic directions which are worked out by the ministries,

departments, and union republics, are then examined in Gosplan USSR, and are reflected in the basic directions of the economic and social development of the country. Gosplan USSR gives the control figures to ministries and departments, including for the TPC. During this period, as the authors correctly propose, a program committee is created (temporarily) headed by an authorized official from the USSR Council of Ministers for the direction and coordination of all of the work connected with the formation of a special-purpose overall program for the formation or expansion of the TPC in accordance with the control figures (the composition of the special-purpose overall program can also be begun at the stage of the development of the basic directions).

The economists E. Ivanchenko and A. Soborovin note: "The special characteristic of the programs consist in the fact that they have the task of ensuring the realization of the entire complex of measures aimed at achieving the goals which have been set, at all stages -- from the solution of a problem to final results. Purposes, resources, national economic effect, stages, work stages, the head client organization, the head executor organization, the subordination of co-executor organizations, the procedure for financing work, the monies and terms of material incentives, and the coordination of work -- all of this is defined in these programs in an overall manner. The technical and economic aspect of solving a problem in them is closely coordinated with the organizational and managerial aspect. At the same time, they become an organic part of the overall system of the planned management of the economy and find a reflection in the system of the plan's balances and indicators at all levels of management."*

Thus, the plan and budget indicators for individual program measures, assignments, and work projects receive a complete reflection in the tables of the draft plan and draft budget of the ministries, departments, and union republics. The draft of the special-purpose overall program with variants of the realization of individual program measures and the plan and budget drafts are examined in Gosplan USSR and in the USSR Ministry of Finance, are refined, and are presented for approval in the established procedure. Approved as a part of the state five-year plan for the economic and social development of the USSR and of the country's annual budget, and balanced for all types of resources (which are not a part of the products list of the national economic plan), the special-purpose overall program is given to executors.

The program committee carries out the coordination of the work of all of the program's executors. It seems to us that in order to achieve the

*VOPROSY EKONOMIKI, No. 10, 1979, p. 120.

greatest effectiveness and purposefulness all of the material and financial resources stipulated in the five-year plan should be put at its disposal.

We believe that such a procedure of planning the TPC will be more in accord with the decree of the CC CPSU and USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Improving the Quality of Work."

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INTRODUCTION OF NEW TECHNOLOGY

FINANCING OF SCIENTIFIC-TECHNICAL RESEARCH, DEVELOPMENT SCRUTINIZED

Moscow VESTNIK MOSKOVSKOGO UNIVERSITETA in Russian No 1, Jan-Feb 80 received by editors 20 Jan 79 pp 35-44

[Article by V. Ye. Shalimov: "Improvement in Financing the Development of Science and Technology"¹]

[Text] The Department of Economics of Industry of the Faculty of Economics of Moscow State University is a head plant—executor of the scientific research subjects "Development and Improvement of the Sectorial System of Overall Management, Planning and Economic Stimulation of Production Development" and "Problems of Improvement in Economic Stimulation of Industrial Production," which form part of the national economic plan for scientific research on natural and social sciences for 1976-1980 approved by the decree of the USSR State Planning Committee, the State Committee on Science and Technology and the USSR Academy of Sciences. In the process of their fulfillment in the department's laboratory of problems of economic accountability and economic stimulation scientific reports were prepared for the USSR State Planning Committee. The editors are publishing the content of the most interesting data on the pages of this journal. The main points of the first report are offered to readers in this issue.

To resolve the contradictions and to eliminate the shortcomings inherent in the system of financing technical progress based on the capital of the state budget and deductions from production costs, a centralized single fund for the development of science and technology replacing the appropriate capital of the state budget, the fund for scientific research and the fund for mastering new equipment began to be formed in a number of industrial sectors. Another fundamental characteristic of the single fund for the development of science and technology lies in the fact that the profit of a sector's enterprises, associations and organizations is the source of its formation. As it seems to us, the formation of the

single fund for the development of science and technology, which is one of the forms of the surplus product, corresponds to the economic nature and assignment of expenditures for scientific and technical progress, eliminates the distortion of the value structure of output and the unsubstantiated increase in the value of many types of new articles, increases the principles of economic accountability in the formation and utilization of this fund, contributes to the development of relations of economic accountability in a sector "along the vertical line" and ensures a certain connection with the economically accountable system of incentives for the general results of economic activity. All this makes it possible to consider the single fund for the development of science and technology a fundamentally new economic tool, which is to more efficiently service the process of financing scientific and technical progress in a sector.

Taking into consideration the experience in the successful functioning of the single fund for the development of science and technology in a number of industrial sectors, the decree No 695 dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Increasing the Effect of the Economic Mechanism on Improvement in the Efficiency of Production and in the Quality of Work" considers it necessary to create this fund in other ministries and departments. The use of the state budget along with the capital of the single fund is envisaged only for financing especially important scientific research, which requires considerable expenditures.

At the same time, a number of significant shortcomings in the formation and utilization of the single fund for the development of science and technology were disclosed in the process of its functioning. First, as a rule, only some of a sector's production associations and enterprises participate in the formation of the single fund for the development of science and technology. Second, the amount of contribution of the profit by enterprises participating in the fund formation is determined arbitrarily, that is, the necessary standards of deductions are absent. Third, the amount of the sectorial single fund is connected with the level and dynamics of indicators not reflecting the scale and rates of execution of work on scientific and technical progress. Fourth, the planned deductions by enterprises from profit into the single fund for the development of science and technology are subject to numerous substantial corrections during the current year. Fifth, production associations and enterprises often do not fulfill the plan for deductions from profit into the single fund.

The economic substantiation of the amount of the single fund for the development of science and technology and the development and establishment of scientifically substantiated standards of formation of this fund are the decisive directions in the elimination of the noted shortcomings in the formation of this fund. In the process of improvement in the existing method of determining an economically substantiated amount of the capital

of the single fund at the level of an industrial sector, evidently, it is advisable to single out two interconnected stages. At the first stage, which, in practice, is comparatively easily realized, the formation of a sector's single fund for the development of science and technology should be connected with the movement of a more stable base indicator (than profit or sale), as well as with the prospects for the dynamics of capital necessary for financing scientific and technical progress in a sector. At the second stage, whose practical implementation is connected with the execution of specific preparatory work, the method of formation of the single fund for the development of science and technology should be changed to the standard analytical method, which makes it possible to determine the amount of capital for the development of sectorial science and technology in the most substantiated way.

At the same time, the method by which the calculation of the necessary amount of capital of the single fund for the development of science and technology should be performed according to the system of analytical standards characterizing the entire single "research-production" process is the most substantiated and promising. In our opinion, the system of standards necessary for an economically substantiated determination of the amount of the single fund for the development of science and technology should be built on the basis of the final national economic results of the "research-production" process. The development and creation of new means and subjects of labor, industrial processes and methods of production organization are such final national economic results. The amount of expenditures at all the stages of the "research-production" process is determined in proportion to the indicated final results.

As noted above, the lack of a scientifically substantiated system of standards of deductions from the profit of enterprises into the single fund for the development of science and technology is one of the reasons for the fact that associations and enterprises transfer capital into the single fund irregularly and often not in a full volume. Of course, the introduction of such a system will make it possible to form the single fund more regularly and fully. However, a successful solution of this problem is directly connected with a change in the order of profit contributions to the single fund for the development of science and technology by enterprises.

At present the contributions of enterprises to the single fund for the development of science and technology in accordance with the instruction on the order of payments and on the procedure of compulsory writing off of capital pertain to the last, fifth order group. For example, payments of profit into the single fund are made after the transfer of profit for capital investments and major repairs and payments for the loans of the State Bank and the USSR All-Union Bank for the Financing of Capital Investments. Thus, deductions into the single fund for the development of science and technology are made after all the other payments of an enterprise are made. The inclusion of profit transfers into the fund in the

last order group does not create the necessary responsibility of enterprises for the formation of capital assigned for the development of scientific and technical progress in a sector. The responsibility of enterprises is also lowered, because, in practice, an incomplete contribution of capital (profit) to the single fund does not involve any economic sanctions from sectorial or financial bodies. As a result, there is a "shortage" of enterprise profit for prompt and full contributions to the single fund for the development of science and technology. The instability of formation of the single fund for the development of science and technology is greatly aggravated when enterprises experience even negligible financial difficulties. "Such enterprises," V. Ye. Astaf'yev stresses quite rightly and with good reasons, "under the existing system of order of payments (my stress—V. Sh.) are unable to promptly transfer capital into the single fund for the development of science and technology."² In fact, an analysis of the theoretical and practical aspects of the method of formation of the single fund for the development of science and technology convincingly shows the need for changing the order of profit contribution.

Let us examine the profit payments of interest to us, first, from the point of view of their economic nature and function and, second, national economic significance. In their economic nature and function deductions from profit into the single fund for the development of science and technology are closest to contributions for capital investments and major repairs and to transfers of depreciation allowances and profits earmarked for financing the production development fund, which, as is well known, are included in the third order group. An analysis of payments included in other groups shows that they are earmarked for the performance of functions greatly differing from the tasks facing the single fund for the development of science and technology. With regard to many payments included in the third order group, as a rule, they serve the needs of expanded reproduction and implementation of scientific and technical progress. This objectively points to their equality with profit contributions for the formation of the single fund for the development of science and technology.

From the point of view of the national economic significance of the examined payments the following should be noted. An examination of the payments of the first two order groups, in particular for wages and for state social insurance, top priority payments into the state budget and payments for physical assets, services and so forth shows that, objectively, in significance they precede profit contributions to the single fund for the development of science and technology. This is determined by the fact that these payments ensure the continuity and regularity of the direct production process, reproduction of manpower and formation and replenishment of the most important general state funds and resources. However, the fourth order group includes, for example, payments for the loans of the State Bank and the USSR All-Union Bank for the Financing of Capital Investments. An analysis of the indicated loans shows that under

present conditions, as a rule, enterprises turn to this source for the implementation of comparatively small quickly repaid measures, in which they are directly interested. At the same time, the formation of resources necessary for the implementation of scientific and technical progress (capital of the single fund for the development of science and technology) represents the most important prerogative of the national economy. Society only entrusts (delegates) this function to sectors for the purpose of a more efficient formation and utilization of this capital. From the point of view of national economic significance contributions to the single fund for the development of science and technology should precede payments for the loans of the State Bank and the All-Union Bank for the Financing of Capital Investments granted for the solution of more specific problems of importance for one enterprise. In their significance profit contributions for the formation of the single fund for the development of science and technology correspond even less to the different payments included in the fifth order group.

Thus, an examination of the economic nature, function and national economic significance of profit contributions for the formation of the single fund for the development of science and technology shows the objective need to include them in the third order group containing similar payments. Finally, from the practical point of view the fact that deductions into the single fund will precede payments for the loans of the State Bank and the All-Union Bank for the Financing of Capital Investments included in the fourth order group greatly mobilizes enterprises for a successful and efficient fulfillment of the financial plan. The proposed change in the order of profit contributions will make it possible, first, for deductions into the single fund for the development of science and technology to occupy an economically substantiated place in the system of enterprise payments, second, to create additional incentives for an increase in production efficiency expressed in this case in a stable fulfillment of the financial plan and, third, to form the single fund for the development of science and technology efficiently and in the planned volume. The determination of the optimum degree and levels of centralization of the formation and utilization of the capital of the single fund for the development of science and technology is an important problem. In the final analysis the deductions of enterprises from profit into the single fund for the development of science and technology are now centralized at the level of sectors and concentrated in the individual account of the appropriate ministry in the USSR State Bank. On the basis of the long-term forecasts of the most important trends in technical and economic development of a sector, the general sectorial five-year plan for scientific research, the utilization of the achievements of science and technology and the general sectorial annual plan the ministry annually distributes the capital of the central single fund for the development of science and technology to head organizations (developers of overall plans) and to all-Union industrial associations (developers of sectorial plans). On the basis of schedule orders and reports on the performed operations (stages) head organizations (as a rule, large scientific research centers) and all-Union industrial

associations directly finance specific executors for the development, creation and mastering of new equipment of enterprises, scientific research organizations, design offices and other organizations.

Under the conditions of existence in sectors of several tens and hundreds of small independent enterprises and organizations such a centralization of the capital of the single fund for the development of science and technology was necessary and justified. In this case the fully centralized single fund for the development of science and technology is a powerful lever of implementation in a sector of a unified technical policy, fulfillment of the assignments of the state plan for the solution of basic scientific and technical problems and assignments resulting from national economic plans and government decrees and execution of sectorial scientific-technical and economic problems. The concentration of capital at the level of sectors makes it possible to exercise a systematic control over the directions and efficiency of its utilization.

It should be noted that numerous, often mutually exclusive, opinions on the degree of centralization, procedure and place of accumulation of capital for financing scientific and technical progress, in particular for the mastering of new equipment, are expressed in the economic literature, which attests to the importance and lack of solution of these problems. As we have already stated, the centralization of the capital of the single fund for the development of science and technology at the level of sectors under the conditions of the former old system of management most fully met the needs of the development of technical progress. Obviously, with the establishment of industrial associations in sectors it becomes possible and necessary to improve the existing system of accumulation of this fund.

At present, however, all-Union industrial associations essentially play only the role of a "transmission" mechanism in the processes of formation and utilization of this capital. The deductions of enterprises (associations) from profit into the single fund are concentrated in the individual account of the appropriate association. The entire amount of capital accumulated in associations on certain dates of every month is transferred to the account of the ministry's single fund for the development of science and technology. The capital of the centralized single fund for the development of science and technology is distributed in a specific way to all-Union industrial associations in accordance with the financial plan on the basis of the received consolidated statements approved by the Technical Administration. All-Union industrial associations directly finance specific executors for the development, creation and mastering of new equipment, that is, associations, enterprises, scientific research institutions, planning and design offices, design offices and other organizations. The determination of the directions and structure of all financing is not the prerogative of an industrial association.

To eliminate such a situation, the decree No 695 dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers permits industrial ministries to place part of the capital of the single fund for the development of science and technology at the disposal of all-Union (republic) industrial associations and large production and scientific production associations.

Under the conditions of functioning of all-Union industrial associations in industrial sectors it seems advisable to accumulate part of the deductions from the profit of enterprises into the single fund for the development of science and technology on the basis of the appropriate standards in special accounts of all-Union industrial associations and to centralize part of these deductions at the sectorial level. Associations, whose activity in the development of technical progress will be directed by a sector's single technical management, will use this capital of the single fund for the development of science and technology with greater efficiency and effectiveness, utilizing it for the appropriate work on new equipment. There is no doubt that, for example, measures for improvement in the technical level and quality of output, which do not involve a change in the sale prices of this output, can be such work. However, the centralized part of the single fund for the development of science and technology should be redistributed by a sector's management among industrial associations most intensively introducing and mastering new equipment and experiencing a shortage of their own capital, as well as be assigned for the solution of the problems of scientific and technical progress of general sectorial (intersectorial) significance.

Certain other problems also require a solution. For example, according to the statute in effect in case of nonfulfillment by an enterprise of the profit plan the obligations for deductions into the single fund for the development of science and technology change proportionally. A situation in which a sector's financial resources for ensuring scientific and technical progress are reduced owing to an unsatisfactory work of a certain enterprise can hardly be considered economically justified. Evidently, two variant ways of resolving the indicated contradiction are possible. According to the first variant, which, in practice, is more feasible, such losses (underpayments) are compensated for by an all-Union industrial association through an appropriate redistribution of deductions from profit among its subdivisions. According to the second variant, which is more systematic in terms of economic accountability, the enterprise independently, mobilizing the appropriate capital, makes the planned deductions from profit into the single fund for the development of science and technology in a full volume.

Assigning a certain share of above-plan profit for the formation of the single fund for the development of science and technology would be a more systematic realization of the principles of economic accountability in the formation of the capital of the single fund for the development of

science and technology. We subscribe to the position of G. V. Bazarova, who cites an example according to which a ministry that overfulfills the profit plan by 3 percent, at the same time, can fail to enter capital in the single fund at an approximate rate of up to 1 percent.³

A scientifically substantiated solution of the examined problems of formation of the single fund for the development of science and technology is one of the most important directions in an increase in the efficiency of financing scientific and technical progress. An efficient utilization of this capital is another, no less important, direction. The capital of the single fund for the development of science and technology should finance fundamental basic scientific research and scientific research, experimental design and technological work and compensate for the planned and additional expenditures of enterprises connected with the mastering and preparation of the production of new types of articles for general industrial purposes, as well as the increased expenditures during the first period of mastering the series or mass production of individual types of articles first mastered in the country.

It should be noted that the existing system of utilization of this fund needs to be improved. An analysis shows that much more capital is now spent on scientific research than on the mastering of new equipment. First, the existing unfavorable structure of utilization of the capital of the single fund for the development of science and technology attests to a significant disproportion in the planning and practice of work on the development of technical progress. This disproportion can lead to a slowdown in the realization of the achievements of technical progress in production and to the creation of a "nondisposable" scientific stock. Second, as a complex and contradictory factor it should be noted that such a structure of utilization of the capital of the single fund for the development of science and technology was formed not only as a result of the increase in the volume of scientific research and experimental design studies performed by scientific research institutes and design offices and financed from this fund, but also as a result of the significant volume of scientific research financed directly by industrial enterprises. Third, the increase in the share of expenditures on scientific research and experimental design studies in the utilized capital of the single fund for the development of science and technology is connected to a certain extent with an increase in the estimated cost of performed work. This is indicated by the constantly increasing savings on the performed work assigned to the development fund of the organizations of the appropriate ministries. An analysis shows that an excess of the estimated cost over the actually utilized capital averages 8 to 10 percent of the volume of work.

On the one hand, the noted factors make it possible to conclude that not all scientific research and experimental design studies are embodied in the real serial new equipment and a considerable part of the work on the mastering of new equipment is done at the expense of outside sources, not

at the expense of the capital of the single fund for the development of science and technology. On the other hand, the formed structure of utilization of the single fund for the development of science and technology shows that enterprises are not interested in obtaining capital for the mastering of new equipment and execution of appropriate work. The preparation of the production of new equipment diverts considerable forces and capital from an enterprise and lowers its indicators of economic accountability. The insufficient interest of enterprises in the execution of work on the mastering of new equipment is confirmed by an analysis of the fulfillment of the appropriate plans.

In connection with this of great importance is the fact that the decree dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers envisages taking the cost of work of an industrial nature connected with the mastering and introduction of new equipment and executed at the expense of the capital of the single fund for the development of science and technology into account in the total volume of output with a calculation of the standard profit for the appropriate groups of articles. Under the former method of planning and recording the indicated work and the expenditures for its execution, as a rule, provision was not made for an additional allocation of the wage fund and production capacities. As a result, with an increase in all this work as compared with the base period enterprises experienced a shortage of the wage fund and manpower. It should be added that there is also a similar situation with production capacities.

However, S. G. Galuza, recognizing the negative effect of this work and expenditures on the results of the economic activity of enterprises, states that expenses for mastering "should be added to the actual volume of sales... only for purposes of correction of incentive funds."⁴ It seems that the rejection of a real inclusion of work and expenditures for the preparation and mastering of the series production of new equipment in the volume of output reflects an inconsistent and contradictory position in the solution of problems of intensifying the economic interest of enterprises in the implementation of scientific and technical progress. Only with a real inclusion of this work and expenditures in the volume of output, just as the services of an industrial nature or services to capital construction are taken into account, that is, in accordance with the planned estimate approved by a superior organization, is it possible to efficiently and systematically provide the activity connected with scientific and technical progress with manpower, production capacities and material resources and to reflect it in the results of the economic activity of an enterprise.

This activity, like any other, should ensure the derivation of a certain profit by an economically accountable enterprise. Therefore, it is advisable, when work on the mastering of new equipment is included in schedule orders, to provide for the derivation of profit from it, which would ensure a minimal or average profitability for a sector. In connection

with this, when the planned amount of the single fund for the development of science and technology is distributed, it is necessary to provide for capital earmarked for the derivation by enterprises of profit on work connected with the preparation and mastering of new equipment before the beginning of series production.

When the utilization of the capital of the single fund for the development of science and technology assigned for the mastering of new equipment was analyzed, it was found that, basically, it was utilized for compensating for the expenditures before the beginning of series production, that is, only for the preparation of the production of new equipment. The fact that, as a rule, the increased expenditures for the mastering of series production in the first year are not compensated from the capital of the single fund for the development of science and technology greatly impedes the process of transformation of the national economic effect of new equipment and of economic accountability (increase in profit), lowers its magnitude or, in general, prevents the formation of the latter for manufacturing enterprises. As a result, prices with incentive surcharges do not even ensure the derivation of a standard profit on many articles during the first period of series production and individual new articles become unprofitable.

In our opinion, the fact that the compensation for the increased expenditures for mastering in sectors is often excluded from the sphere of effect of the single fund for the development of science and technology is due to several reasons. This is due to a certain shortage of the capital of the single fund for the development of science and technology, which, first, can be partially determined by an economically unsubstantiated amount of the single fund for the development of science and technology, which does not reflect the real need of a sector for the appropriate resources and, second, to a certain extent can be artificially created by the disproportion formed in the planning and practice of the execution of work on scientific and technical progress.

The effect of the first factor can be eliminated by the introduction of a substantiated method of determining the planned amount of the single fund for the development of science and technology. The amount of this fund should meet the actual need of a sector. At present, however, in practice, it is impossible to determine to what extent the "shortage" of the capital of the single fund is due to objective reasons and to what extent, to the disproportion formed in the measures for scientific and technical progress. The creation of the necessary correspondence between the amount of the single fund for the development of science and technology and the actual need for this capital is connected with the development of a wide sectorial standard base for the entire "research-production" cycle.

However paradoxical it may be, the effect of the second factor is connected with one of the positive characteristics of the single fund for the development of science and technology. As is well known, the existence in sectors of two independent funds—the scientific research fund

and the fund for mastering new equipment--made it possible (if there was such a need) to redistribute the appropriate capital. In principle, the single fund should have eliminated this contradiction and made it possible to assign the combined capital in accordance with the objective needs of the development of scientific and technical progress. In practice, the possibility for the necessary maneuvering of the capital of the single fund for the development of science and technology was transformed into its opposition, that is, an ever increasing part of the combined capital began to be assigned to the sphere of science. Evidently, taking into consideration to some extent the noted characteristics of the utilization of the capital of the single fund for the development of science and technology, some authors, for example G. V. Bazarova, consider the variant of establishment of two funds possible, that is, the fund for the development of science and the fund for the mastering and introduction of new equipment.⁵ Thus, in essence, a return to a separate existence of funds with a certain expansion of the functions of the former fund for mastering new equipment, which did not prove its value, is proposed. The experience accumulated in such a separate financing of individual stages in the single "research-production" process points to the debatable nature of the proposed variant. Evidently, the formation of an efficient structure of utilization of the capital of the single fund for the development of science and technology should be carried out in the following ways.

First, at present, when the development, creation and mastering of a new article are planned, the volume of financing necessary for the execution of the appropriate work only before the beginning of series production is determined and indicated in the schedule-order. In our opinion, at the beginning of development of new equipment it is necessary to plan the capital earmarked for the compensation for the increased expenditures for mastering series production during the first period and to include it in the volume of financing indicated in the schedule order. Under the proposed system of planning and financing the expenditures for mastering the necessary capital will be taken into consideration in the carryover volumes of financing and cannot be assigned for other purposes; for example, for new subjects of the nature of basic research. This will create in sectors a certain proportionality in the execution of scientific work and work on mastering new equipment.

Second, the development of the appropriate scientifically substantiated standards of utilization of the capital of the single fund for the development of science and technology is needed. These standards should be developed on the basis of a real correlation of work and expenditures for individual stages of the single "research-production" process. At the same time, probably, it is necessary to establish a permissible upper (limit) boundary of deviation from a certain standard, which is to ensure a certain freedom in the maneuvering (redistribution) of the capital of the single fund for the development of science and technology depending on specific tasks and, at the same time, to control the formation of an efficient structure of utilization of this fund.

Evidently, the first proposal can be realized at the first stage of improvement in the utilization of the single fund for the development of science and technology, since it does not require the implementation of additional preparatory measures. The utilization of the second proposal is connected with the performance of certain investigations and calculations and can represent a further stage in the improvement in the mechanism of functioning of the single fund for the development of science and technology.

It seems to us that the fact that the single fund for the development of science and technology can appear as a single source of financing the entire set of expenditures for the creation of a scientific stock in a sector and for the development of models of new equipment--preparation and mastering of its series production--can be one of the basic advantages of this fund. Such a single source of financing can ensure the necessary unity of the entire process of development, creation and mastering of new equipment, which greatly accelerates its introduction into production. The compensation for the increased expenditures for mastering series production during the first period is the most important and integral function of the single fund for the development of science and technology. With regard to an artificial increase in the allocations for scientific research, it is connected with certain shortcomings in the planning and practice of execution of work on scientific and technical progress.

FOOTNOTES

1. The article was written on the basis of the author's report, which was discussed at the Scientific Council of Moscow State University "Economic Accountability and Improvement in Economic Stimulation of Production" with the participation of the specialists of the USSR State Planning Committee, the State Committee on Science and Technology, the Scientific Research Financial Institute, the USSR Ministry of Finance, the USSR Ministry of Electrical Engineering Industry and the USSR Ministry of Power Machine Building and sent to the USSR State Planning Committee. The conclusions and proposals contained in the report were taken into consideration during the elaboration of the draft of the Standard Statute on the Formation and Utilization of the Single Fund for Science and Technology of an Industrial Ministry prepared by the USSR State Planning Committee and the State Committee on Science and Technology.
2. Astaf'yev, V. Ye., "Ekonomicheskoye Stimulirovaniye Tekhnicheskogo Progressa" /Economic Stimulation of Technical Progress/, Moscow, 1976, p 41.
3. See: Bazarova, V., "Pribyl' i Khozraschet v Usloviyakh Nauchno-Tekhnicheskogo Progressa" /Profit and Economic Accountability Under the Conditions of Scientific and Technical Progress/, Moscow, 1974, p 143.

4. Yampol'skiy, S. M., and Galuza, S. G., "Ekonomicheskiye Problemy Upravleniya Nauchno-Tekhnicheskim Progressom" /Economic Problems of Management of Scientific and Technical Progress/, Kiev, 1976, pp 334-335.
5. See: Bazarova, G. V., "Pribyl' i Khozraschet v Usloviyakh Nauchno-Tekhnicheskogo Progressa," p 98.

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